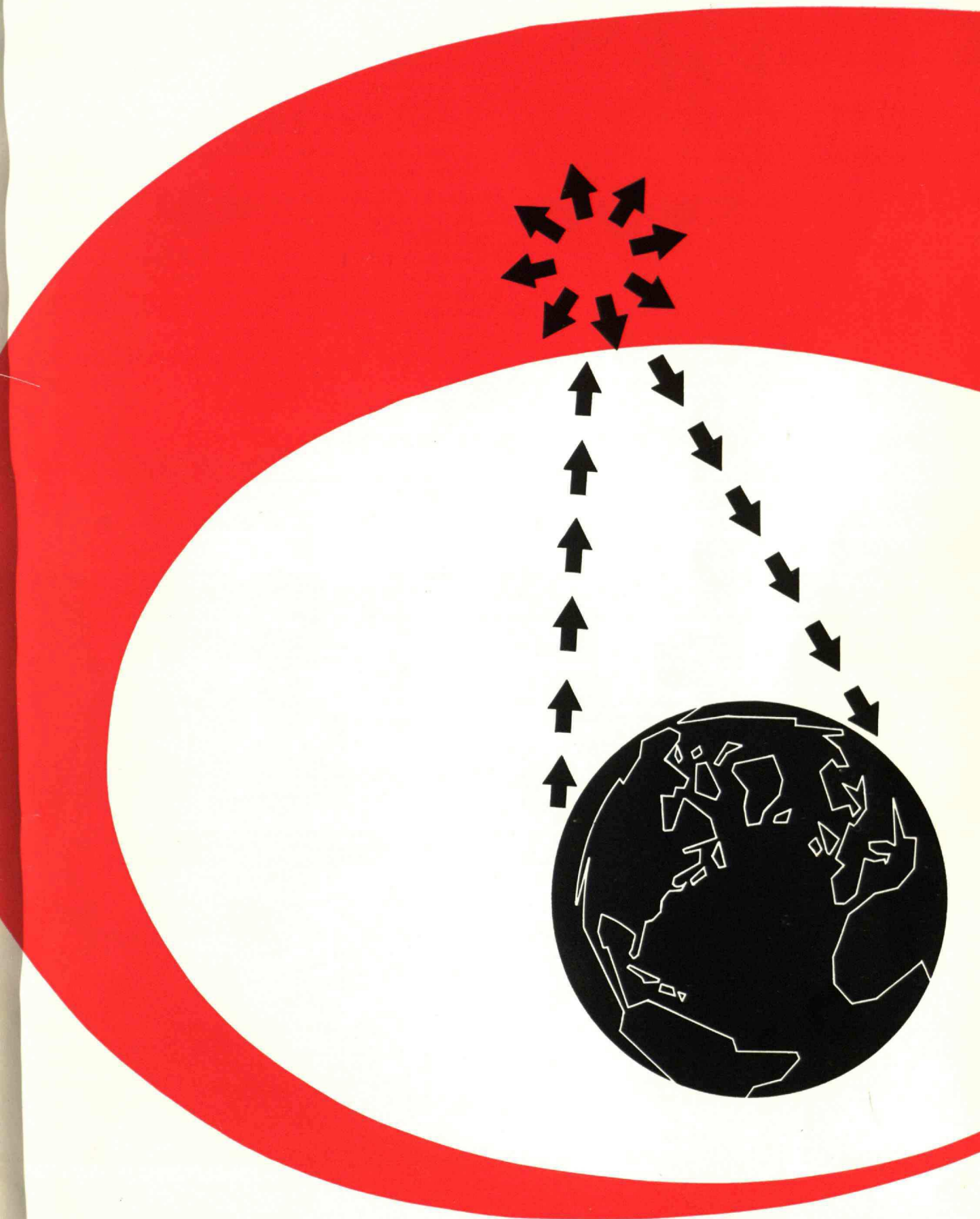


Technology Review

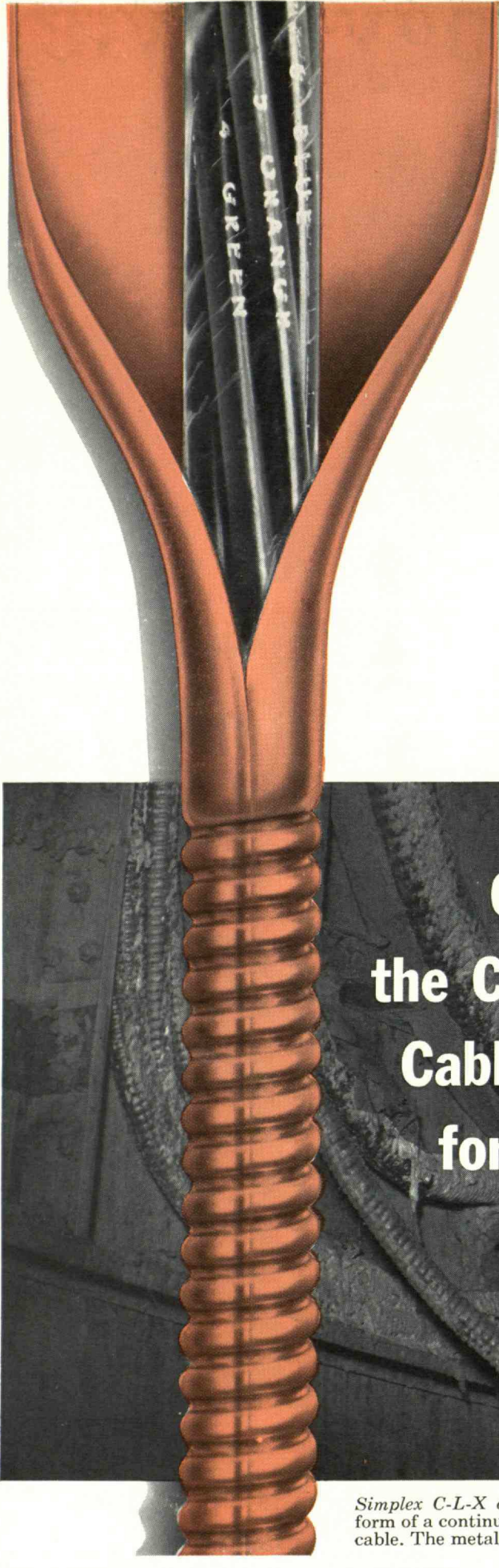


November 1960: M.I.T. Prepares for Its Second Century

technology review

Published by MIT

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Feedback

More on Math for Kids

FROM ROBERT B. DAVIS, '46:

If you read the Technology Review carefully, you may know that an article of mine appeared in the December, 1959, issue, describing some experiments in teaching relatively advanced mathematics to relatively young children. In the March, 1960, issue, my friend and former teacher, Prof. Philip Franklin, has written a cogent account of his reasons for believing that my work and that of my colleagues may well be headed in a conspicuously erroneous direction.

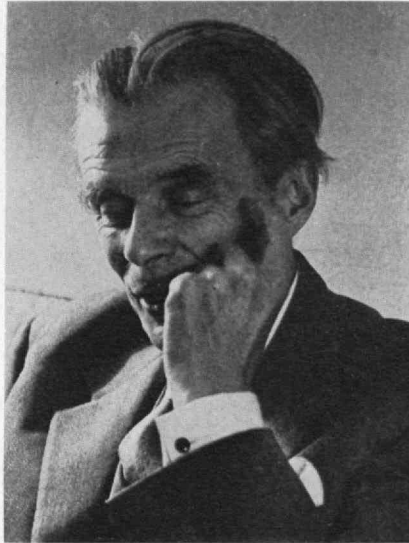
I now write, therefore, in a pleased and friendly spirit. Academic disputation being an indoor sport that appeals to me greatly, finding myself challenged by an opponent whom I admire is more than I could have dared expect. Let us even overlook, for the moment, the fact that I agree with a great deal of what Professor Franklin writes. We can, if we try, find some grounds for disagreement.

There seem to be two questions in dispute: first, is it wise "to use boxes," i.e., to write $3 + \square = 5$ in place of the traditional $3 + x = 5$; and, second, is it reasonable to suppose that children can discover for themselves the quadratic formula, or the concept of *slope*, or the fact that

$$\int_0^{\infty} e^{-x^2} dx = \frac{\sqrt{\pi}}{2}.$$

I may have phrased these questions badly. If I understand the alternatives correctly, we are asking: Is it better to use, for a time, notation that youngsters find self-explanatory (but many adults find abhorrent), in order to get quickly at important mathematical ideas—or, is it preferable to begin with the standard notation from the very outset?

The second question is apparently this: Is it possible (and worth the effort) (Continued on page 46)



ALDOUS HUXLEY, author of *Brave New World* and many other novels, is *Carnegie Visiting Professor of Humanities at M.I.T.* this fall. In addition to giving a series of public lectures, he is conducting the *Humanities Senior Seminar*. Mr. Huxley also will participate in the exercises next spring marking the Centennial of the Institute.

EDITOR: Volta Torrey; BUSINESS MANAGER: R. T. Jope, '28; CIRCULATION MANAGER: D. P. Severance, '38; EDITORIAL ASSOCIATES: J. J. Rowlands, Francis E. Wylie, John I. Mattill; EDITORIAL STAFF: Ruth King, Muriel R. Roberts, Norma G. Humphries; BUSINESS STAFF: Madeline R. McCormick, Marianne G. Hagerty; PUBLISHER: H. E. Lobdell, '17.

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The coloring of the cover has no political significance. Red is an M.I.T. color, and a Lincoln Laboratory project inspired Designer Ralph Coburn, '47. (see page 23.)

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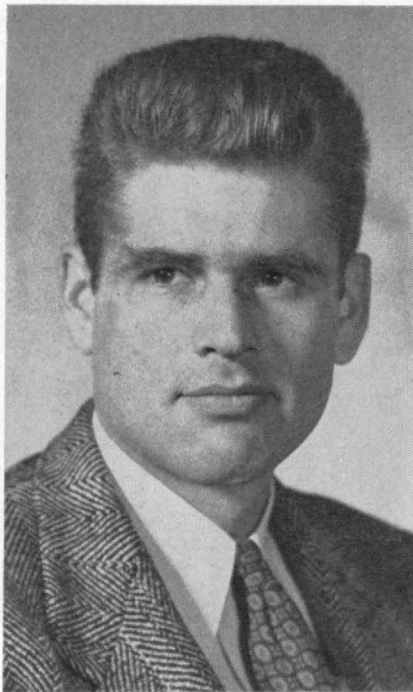
Electrical Engineering Department's Head

PROFESSOR PETER ELIAS, '44, became head of the M.I.T. Department of Electrical Engineering last July 1. He has been a member of its Faculty for seven years, active in its educational programs, and at the age of 36 is widely known as an authority on information theory. His notable contributions to this field have included work on predictive coding, error-correcting codes, the exploitation of the notion of "individual information," and methods of utilizing feedback to simplify coding.

Professor Jerome B. Wiesner, who served last year as Acting Head of the Department, is devoting his energies now to the development of the Research Laboratory of Electronics and the Center for Communication Sciences.

The new head of the Institute's largest Department entered Swarthmore College in 1940 and transferred to M.I.T. as a junior in 1942. After receiving his bachelor's degree in Industrial Management, he served two years in the U.S. Navy, then continued his studies at Harvard University, receiving the master of science degree in 1948, the master of engineering science degree in 1949, and his doctorate in 1950. He held a teaching fellowship at Harvard between 1948 and 1950, and from 1950 to 1953 was a junior Fellow of the Society of Fellows. He joined the M.I.T. staff in 1951 as a guest of the Research Laboratory of Electronics, and was appointed assistant professor in 1953, associate professor in 1956, and professor in 1960. He was a visiting lecturer in electrical engineering in 1958 at the University of California at Berkeley.

He is a member of Sigma Xi, Eta Kappa Nu, the Institute of Mathematical Statistics, and Commission VI of the International Scientific Radio Union, and a Fellow of the Institute of Radio Engineers. Professor Elias is co-editor of the



Professor Peter Elias, '44

journal *Information and Control*, and has written on information theory for other journals. He also has served E. I. du Pont de Nemours & Company, the Polaroid Corporation, and Baird-Atomic, Inc., as a consultant.

Professor and Mrs. Elias, the former Marjorie Forbes, and their three children live in Cambridge.

Corporation Members

LAURANCE S. ROCKEFELLER, chairman of Rockefeller Center in New York, and George P. Edmonds, '26, chairman of the Wilmington Trust Company, in Wilmington, Del., have been elected to special five-year term memberships on the M.I.T. Corporation.

Three other prominent business executives became alumni term members of the Corporation last July 1. They are Bennett Archambault, '32, chairman of the board and President, Stewart-Warner Corporation, Chicago; Semon E. Knudsen, '36, Vice-president of the General Motors Corporation and general manager of the Pontiac division; and Robert H. Winters, '33,

President of the Rio Tinto Mining Company of Canada, Ltd., and a former member of the Canadian Cabinet.

Whitman's New Post

ON LEAVE of absence from M.I.T., Professor Walter G. Whitman, '17, became science adviser to the U.S. Secretary of State last August. He was Secretary General of the United Nations International Conference on the Peaceful Uses of Atomic Energy in 1955, and had previously served the nation in many capacities. He was a member of the General Advisory Committee to the Atomic Energy Commission from 1950 to 1956 and of the Office of Defense Management's Science Advisory Committee from 1951 to 1955, chairman of the Research and Development Board of the Department of Defense from 1951 to 1953, and a member of the National Advisory Committee for Aeronautics from 1951 to 1953.

Professor Whitman first joined the Institute's staff in 1917. For nine years he was associated with the Standard Oil Company of Indiana, then returned to the Institute in 1934 as Head of the Department of Chemical Engineering.

Dr. Draper's Aide

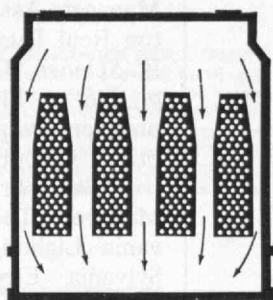
HAVING RETIRED from the U.S. Navy this year after 20 years' service, Comdr. Samuel A. Forter, '47, has become assistant director of the M.I.T. Instrumentation Laboratory. He is working with its director, C. Stark Draper, '26, on advanced design and development of the inertial guidance system for Polaris, the Navy's 1,200-mile ballistic missile.

Commander Forter was graduated from the U.S. Naval Academy in 1940, and served on ships in both the Pacific and European theaters during World War II.

In Physical Education

EDWARD A. CROCKER, a member of the Department of Athletics staff at M.I.T. since 1957, became director of physical education this fall. In addition to coaching the varsity tennis and squash teams, he now administers the comprehensive physical education class activities involving about 3,000 undergraduates.

(Continued on page 6)



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Individuals Noteworthy

(Continued from page 4)

New Posts

NAMED in the news recently were the Alumni whose elections, promotions, and appointments follow:

Barnett F. Dodge, '17, as Dean, School of Engineering, Yale University . . . *John O. Bower*, '22, as President and Chief Executive Officer, Colsag Corporation . . . *James W. Kinnear, Jr.*, '22, as Vice-president, Steel Producing Divisions, United States Steel Corporation;

Irving Whitehouse, '22, as Director of Research, Republic Steel Corporation . . . *Sydney S. Dean*, '23, as Secretary, Building Owners and Managers Association, Greater Boston Real Estate Board . . . *David W. Skinner*, '23, and *C. Vincent Vappi*, '48, as President and as Vice-president, respectively, of the Cambridge Chamber of Commerce;

William P. Lowell, Jr., '26, as Manager, Technical Liaison, Sylvania Lighting Products Division, Sylvania Electric Products, Inc. . . . *F. Edward Anderson*, '27, and *Robert L. McCormack*, '33, as Director, Commercial Regional Offices, and as Vice-president, respectively, Raytheon Company;

Theodore E. Casselman, Jr., '27, and *Edgar M. Hawkins, Jr.*, '30, as Vice-presidents, Stone & Webster Service Corporation . . . *Edward R. Stevens*, '28, as President, Baldwin-Ehret-Hill Company, Inc. . . . *Eric A. Bianchi*, '29, and *Paul Wing, Jr.*, '34, as General Manager, and as Manager of Engineering, respectively, Mason-Neilan Division, Worthington Corporation;

Paul V. Keyser, Jr., '29, as Executive Vice-president, Socony Mobil Oil Company . . . *Charles T. Abbott*, '30, as Vice-president, Operations, NEGEA Service Corporation . . . *Edward L. Mears*, '2d, '30, and *J. Wade Miller*, '48, as Vice-presidents, Dewey and Almy Chemical Division, W. R. Grace & Company;

Carl F. Baker, '31, as Quality Manager, Chandler Evans Corporation . . . *Edwin J. Ducayet*, '31, as President, Bell Helicopter Company . . . *James B. Fisk*, '31, as a Director, American Cyanamid Company;

Claude F. Machen, '31, as a Director, Boston Gas Company . . .

(Continued on page 10)



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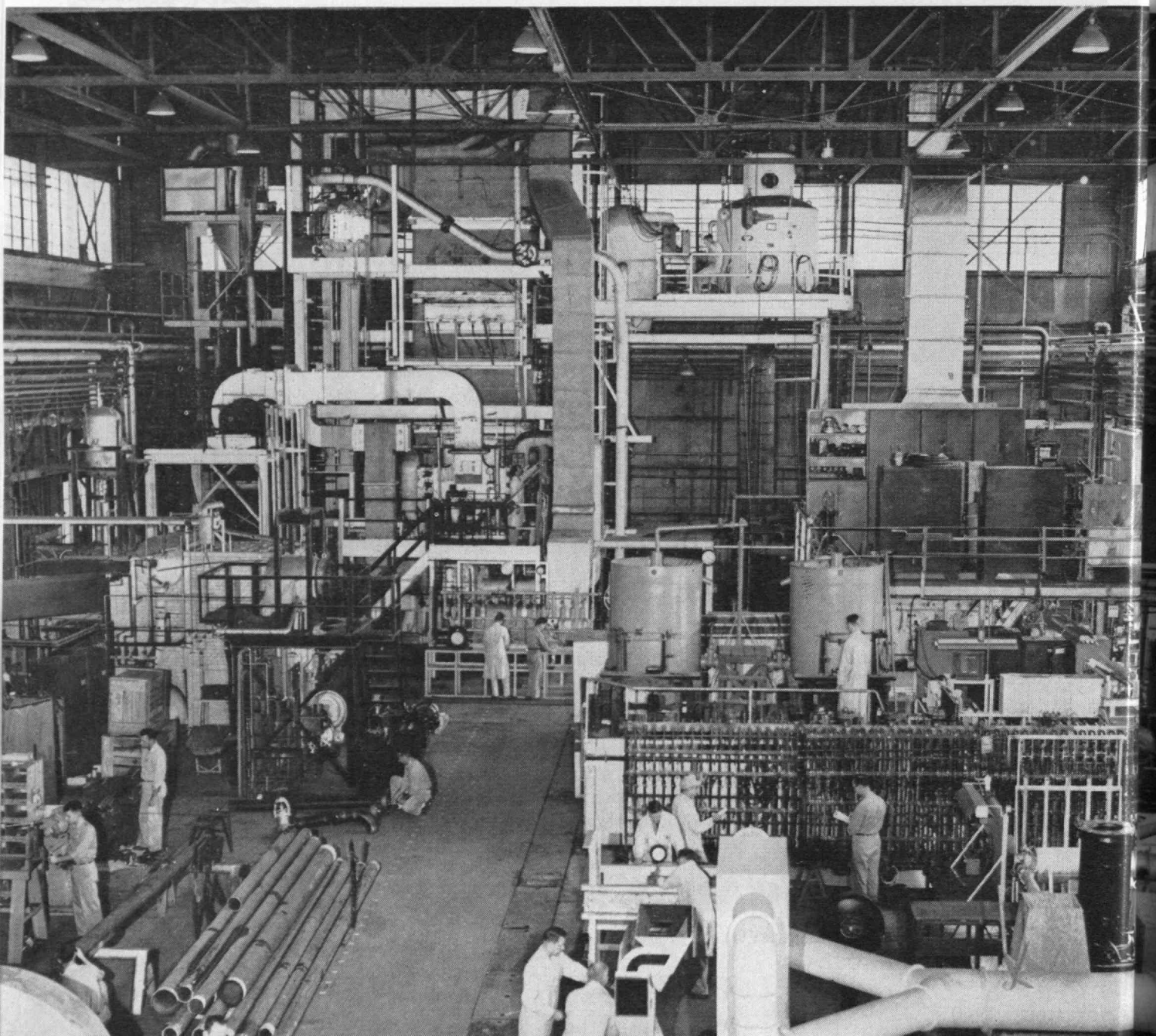


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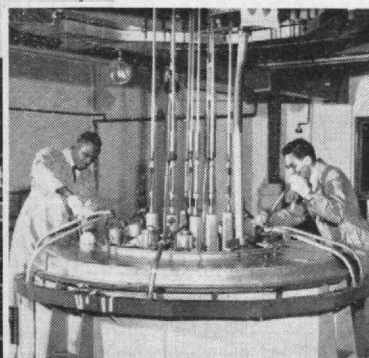


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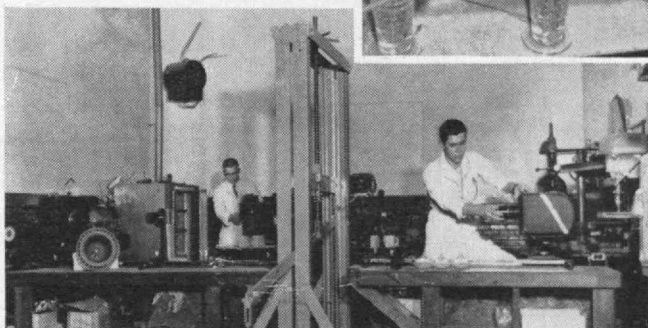
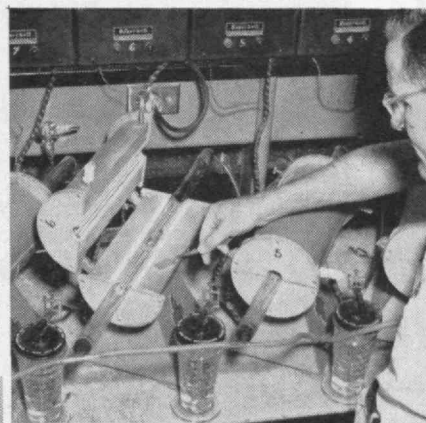


THE KREISINGER DEVELOPMENT LABORATORY is used for the study of fuels and fuel burning systems, water, steam and combustion gases. It contains several test boilers, among them a large Controlled Circulation unit capable of operating at 2000 pounds pressure and a super-critical pressure boiler designed to produce steam at 5000 pounds pressure and 1200°F. This laboratory is one of eight C-E research facilities which, together, total more than four acres under roof.



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LP-Gas Assn., American Petroleum
Inst., National Fire Protection Assn.,
Canadian Gas Assn., Agricultural
Ammonia Inst.

Individuals Noteworthy

(Continued from page 6)

Gilbert M. Roddy, '31, as a Director, Merchants National Bank, Boston . . . *Ivan A. Getting, '33*, as President, Aerospace Corporation, El Segundo, Calif.;

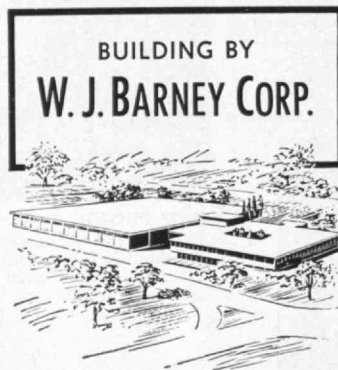
Franklin P. Parker, '36, as a Director, Wellesley Trust Company . . . *Brigadier General Alvin C. Welling, '38*, as Director of the Construction Office, Ballistic Missile Complex, U.S. Air Force, Inglewood, Calif. . . . *Herbert A. Finke, '39*, as Director, Long Range Product Planning, Varian Associates;

Howard H. Reynolds, '39, and *Austin W. Fisher, Jr., '41*, as Vice-presidents, Ludlow Papers and Ludlow Plastics Division, Ludlow Corporation, Needham Heights . . . *Paul N. Stanton, '39*, as Vice-president, Marketing, Pratt and Whitney Company, Inc.;

William M. Hearon, '40, as Vice-president, Research and Development, Crown Zellerbach Corporation . . . *Julius P. Molnar, '40*, as Vice-president, Bell Telephone Laboratories . . . *Albert H. Bowker, '41*, as President, Institute of Mathematical Statistics;

Walter J. Robbie, '42, as Vice-president, Eaton Paper Corporation . . . *Morton F. Spears, '43*, as Vice-president, Engineering, Pick-

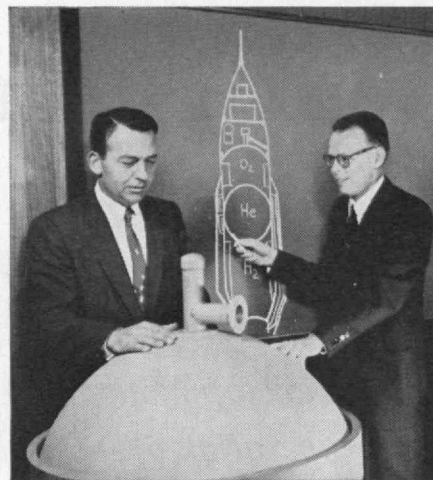
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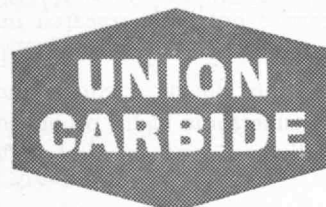
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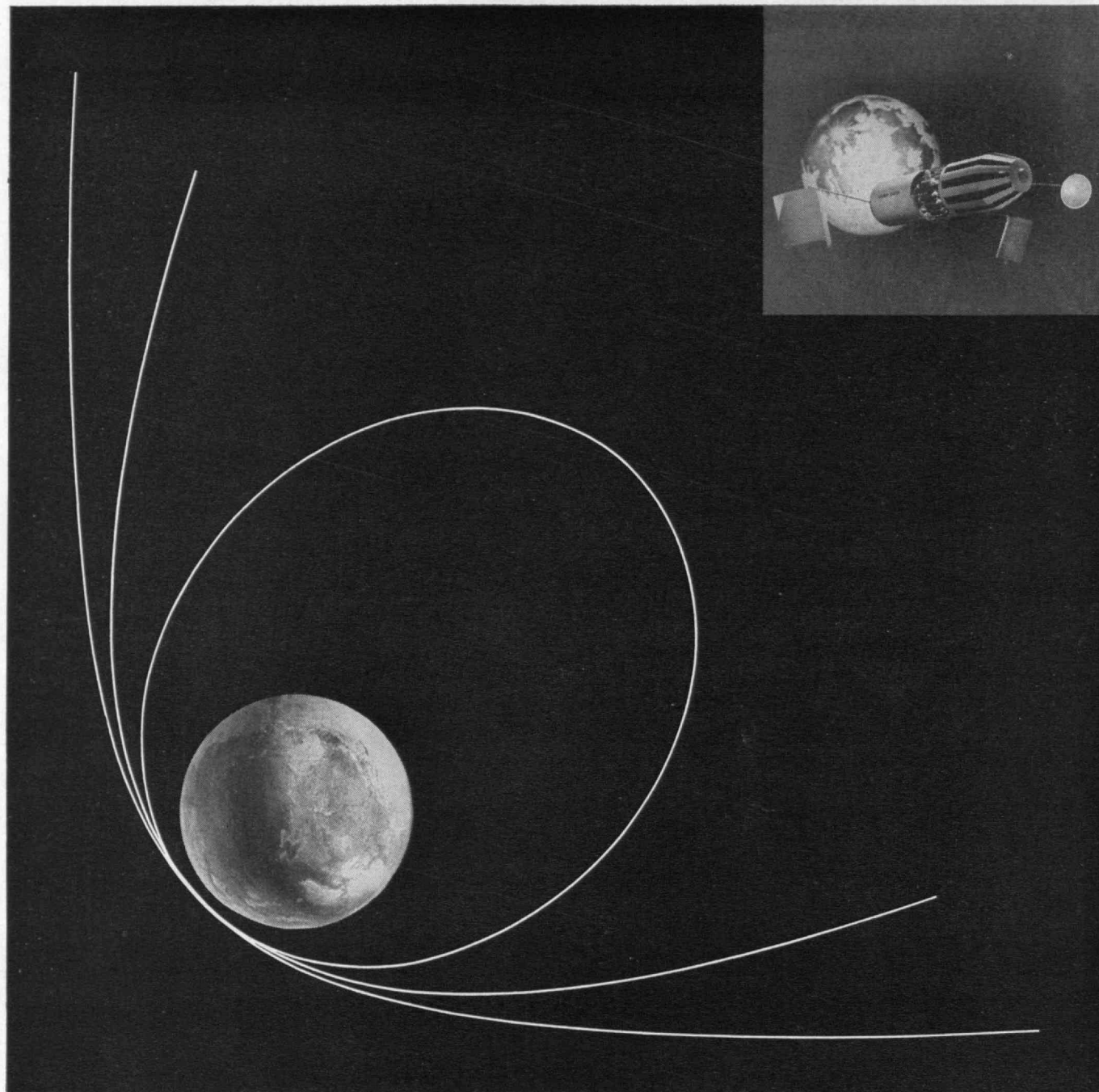
Periodic Chart ©Welch—Chicago

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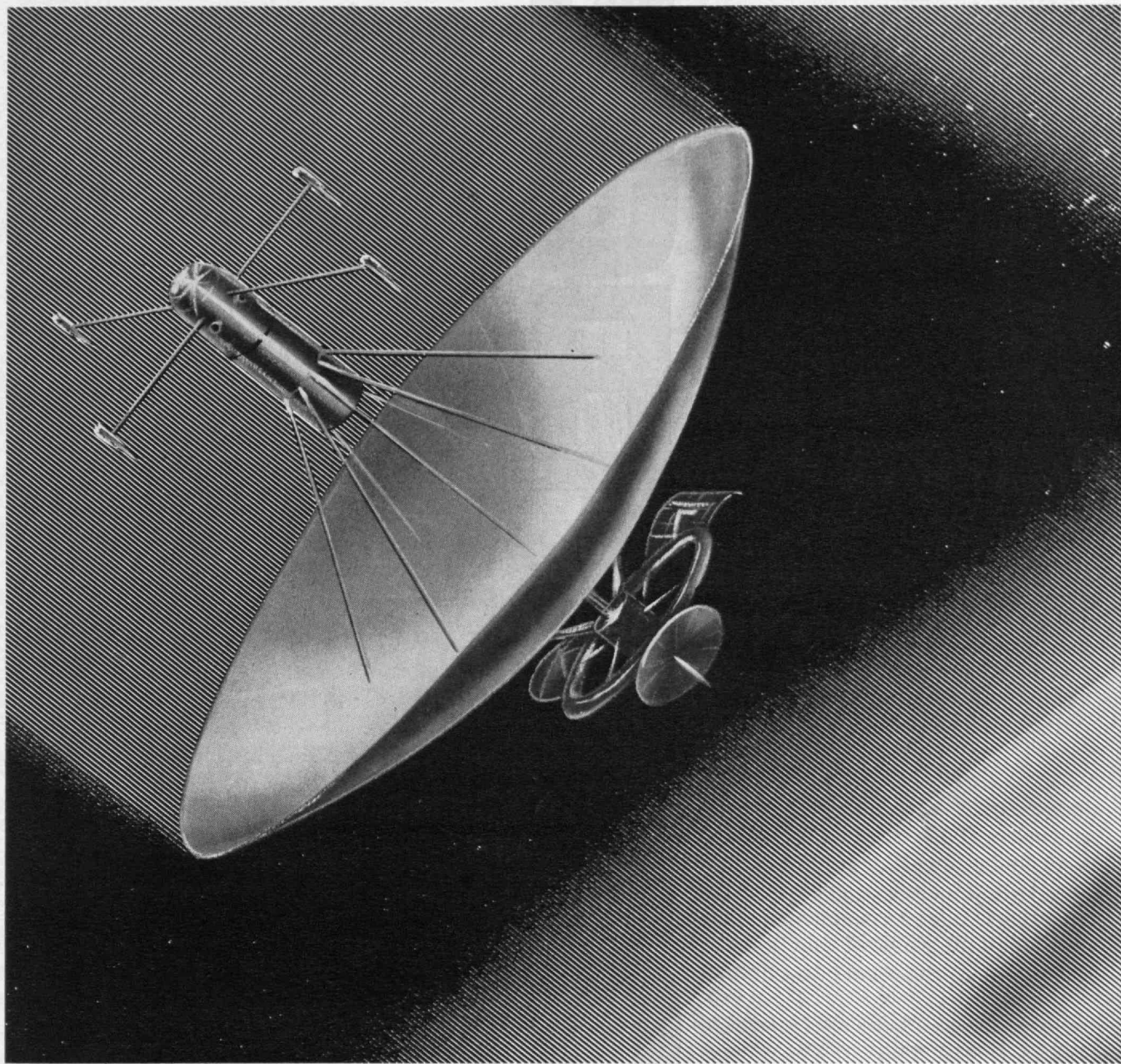
Other Boeing scientists and engineers are working toward the advancement of supersonic flight, propulsion systems, gas turbine engines, commercial and military aircraft, vertical and short take-off and landing aircraft.

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The wide scope of Boeing programs in all areas of manned and unmanned flight, from theoretical research to advanced precision fabrication, offers careers of unusual interest to professional specialists in engineering and scientific fields, as well as in other-than-engineering areas. Drop a note, mentioning degrees and major, to Mr. John C. Sanders, Boeing Airplane Company, P. O. Box 3822 - UMT, Seattle 24, Washington.

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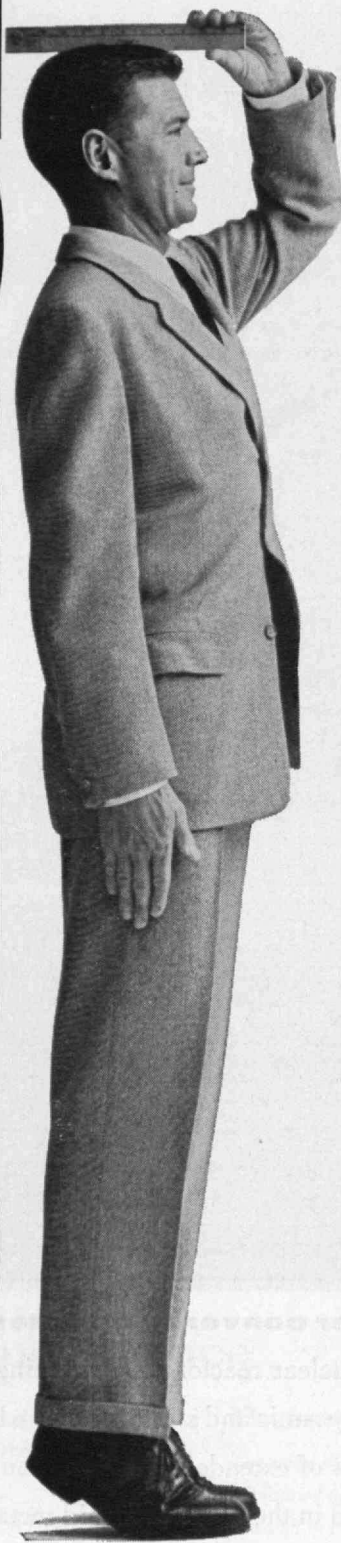
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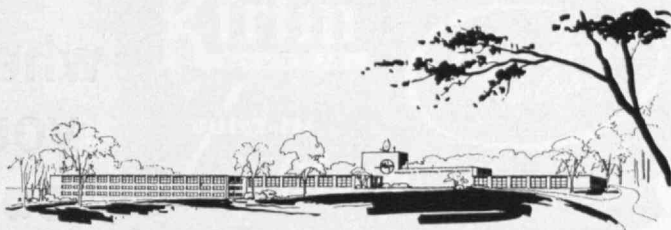
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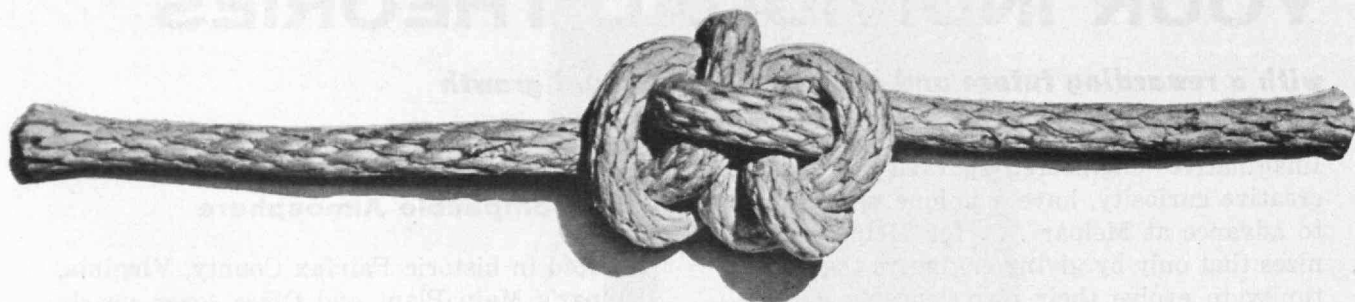
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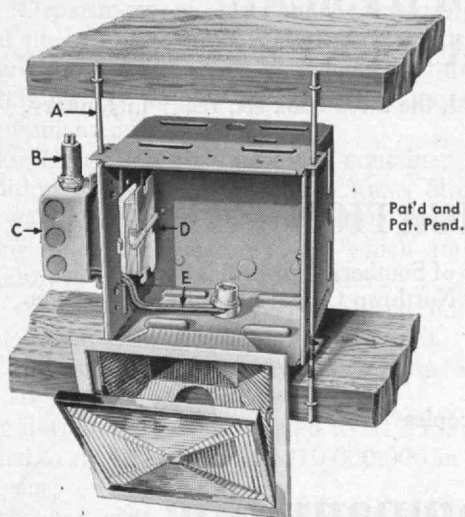
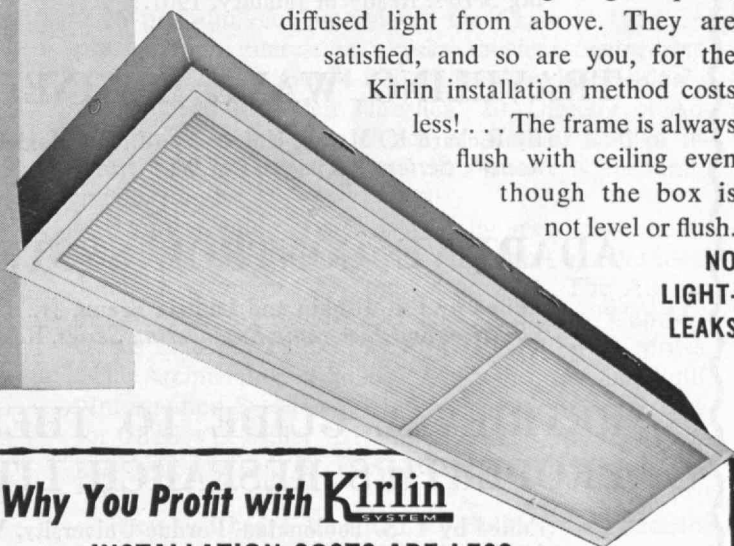
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Trend Of Affairs



The President's Report

THE ANNUAL REPORT of President Julius A. Stratton, '23, dealt with the many recent changes, current trends, and potentialities of M.I.T. in its second century. "In simplest terms," he wrote, "we propose to enhance the quality and character of professional education; to develop the physical environment of our campus so that it may contribute more effectively to the cultural and spiritual life of the student; and to create new facilities for furthering the advancement of scientific knowledge."

He cited as one of the extremely important steps taken lately "the development of teaching laboratories, new both in equipment and concept, which will supplement the new or revised courses in theory." He emphasized the great potential of interdepartmental laboratories and centers "in providing the desired balance and fullness of experience to the professional education of the engineer." And he called attention to some of the recent physical changes in the Institute:

❑ The Department of Aeronautics and Astronautics has given up the old student wind tunnel in Building 33 to provide a student projects laboratory.

❑ The Department of Mechanical Engineering has removed the majority of its materials-testing machines from Building 1, and some of its metal-cutting tools from Building 35, to provide space for more up-to-date equipment and studies.

❑ Senior House has become a self-contained unit by the addition of a gatehouse at the Ames Street end, and a wall and fence along Amherst Street.

Among other items in the report which are not reported elsewhere in The Review were:

❑ The student body last year numbered 6,270; enrollment in the Graduate School was 2,690.

❑ The Institute's academic expenses rose approximately 10 per cent to \$25,468,000.

❑ Gifts during the year amounted to \$17,355,000, as contrasted to slightly more than \$10,000,000 in the preceding year.

❑ Thirty per cent of the undergraduates received scholarship aid; approximately 75 per cent registered for part-time employment.

❑ Seventy-one different countries were represented in the foreign student population of 739.

Copies of the report are being sent to all Alumni.

The Class of '64

THE 900 FRESHMEN who entered M.I.T. this fall came from 600 secondary schools in 45 states and 25 foreign countries. Eighty-four per cent were in the top tenth of their secondary school classes; 164 were valedictorians and 56 were salutatorians. Twenty-four, a record number, were women. Thirty-eight were children or grandchildren of M.I.T. Alumni.

(Three members of the new class are pictured above.)

In pre-admission interviews, the Class of 1964 expressed high interest in physics, nuclear engineering, and mathematics. But M.I.T. students tend increasingly, according to B. Alden Thresher, '20, Director of Admissions, to defer their choice of a major field of interest for a year or two, and the Institute is encouraging this trend.

Before regular classes began, the new class heard exhortations and encouraging remarks by President Julius A. Stratton, '23, and lectures on "The Accents of Cultures," by Professor Huston C. Smith; "Can Machines Learn to Think?" by Professor Philip M. Morse; "The Architecture of Solids," by Professor John Wulff; "Information Systems in Civil Engineering," by Professor Charles L. Miller, '51; and "Plasmas Open New Engineering Vistas," by Professor Herbert H. Woodson, '51.

They also heard Jonathan W. Bulkley, '61, describe his summer in Ghana as one of 190 American and Canadian students who took part in the Crossroads Africa project. Mr. Bulkley pointed out that a young Ghanaian might become either a witchcraft practitioner or an airplane pilot; and his summer in Africa, he emphasized, had heightened his appreciation of his opportunities at the Institute.

Inertial Navigation Patents

TWO PATENTS covering significant advances in the art of inertial navigation of ships and airplanes were issued this fall to Walter Wrigley, '34, Forrest E. Houston, '48, and Joseph E. DeLisle of the M.I.T. Instrumentation Laboratory. Concepts and techniques covered by these patents already are being used in SINS (Ship's Inertial Navigation Systems) aboard missile-launching nuclear submarines, and may be applicable in commercial maritime and aviation industries.

709 Replaces 704

THE IBM 704 computer in the M.I.T. Computation Center, which 2,000 representatives of 32 New England schools have used, was replaced this summer by a \$2,500,000 IBM 709. This new machine can be operated more efficiently, and Professor Philip M. Morse, Director of the Center, expects that by next year "the majority of the students entering M.I.T. will learn how to use a digital computer before they obtain their undergraduate or graduate degrees."

The International Business Machines Corporation contributed the 709, as it did the 704, as part of its program of assistance to education and academic research. The company also makes about 24 research assistantship grants each year, about half of which come to M.I.T. and half to other co-operating institutions. Only one other university has an IBM 709 devoted to education and research.

More than 1,000 different problems were run on the 704 during the three years it was at M.I.T. It calculated the orbit of Sputnik I, and worked on a great variety of other problems in accounting, nuclear physics, psychology, meteorology, business cycle prediction, physiology, astronomy, public medicine, and game playing. With it, too, M.I.T. researchers devised new "languages" to employ in communicating with computers. These included one called COMIT, used for machine translation and research regarding human languages; LISP (for list processor), which permits operators to instruct a machine to solve problems in mathematical logic; and DYNAMO, a language used in the simulation of industrial and business situations.

At the same time that Professor Morse announced the installation of the new machine, he announced the appointment of Fernando J. Corbato, '56, as Associate Director of the Computation Center.

Changes in Course VI-A

J. FRANCIS REINTJES, Associate Professor of Electrical Engineering, has become administrator of the cooperative course in electrical engineering at M.I.T., requirements for admission to the course have been modified, and more Faculty participation in the program has been arranged. Known as Course VI-A, this program permits undergraduates in electrical engineering to combine their academic studies with employment for specified periods in industry or government, and thus to gain an understanding of the bearing of scientific and engineering principles that are discussed in their classrooms on current engineering problems. The students in the program are selected by concerns co-operating with the Institute, and continue academic studies during their absence from M.I.T. All second-year electrical engineering students who are in good standing may apply for admission to Course VI-A now.

As its administrator, Professor Reintjes succeeds Eugene W. Boehne, '28, who has joined the engineering staff of the I-T-E Circuit Breaker Company, in Philadelphia, after heading Course VI-A for 13 years. Professor Reintjes has been a member of the Institute's Faculty since 1947, and is also Director of the Electronic Systems Laboratory.

Industrial and governmental organizations currently participating in the co-operative program, and members

of the Faculty responsible for liaison with them, are: Air Force Cambridge Research Center (Bedford, Mass.), Lan J. Chu, '35; American Electric Power Service Corporation (New York) and Boston Edison Company (Boston), Karl L. Wildes, '22; Bell Telephone Laboratories (Murray Hill, N. J.), Claude E. Shannon, '40; General Electric Company (Pittsfield, Mass.), Robert L. Kyhl, '47; General Electric Company and Philco Corporation (Philadelphia), Henry J. Zimmermann, '42; General Electric Company (Syracuse and Utica, N.Y.), Leonard A. Gould, '48; General Radio Company (Concord, Mass.), Truman S. Gray, '29; International Business Machines Corporation (Poughkeepsie, N. Y.), Dean N. Arden; Raytheon Company (Waltham, Mass.), William M. Siebert, '46, and Louis D. Smullin, '39; and U. S. Naval Ordnance Laboratory (White Oak, Md.), Herbert H. Woodson, '51.

The changes made recently, to strengthen and expand the program, were recommended by a committee of administrators and alumni of the course which included Professors Woodson, Samuel H. Caldwell, '25; Marcy Eager; and Amar G. Bose, '51.

Automata in Russia

CONCENTRATION on the theory and applications of automatic control is a cornerstone of the Soviet Union's campaign to outdo the American economy, according to experts who attended the first congress in Moscow of the International Federation for Automatic Control last summer. It was a congress at which M.I.T.'s Faculty and Alumni were well represented, and a report on it was a highlight of a Joint Automatic Control Conference, sponsored by five professional societies, at M.I.T. this fall.

"They are vastly more aware of what we are doing than we are of their work," said John G. Truxal, '47, Head of the Electrical Engineering Department at the Polytechnic Institute of Brooklyn. The Russians place a heavy emphasis on control theory, but a move now under way to set up automation institutes for specific industries is calculated to marry theory to practice in the next five or ten years, other participants in the discussion agreed. "Russia is trying to leap-frog over 50 years of U.S. technical development which necessitated the development of great skill on the part of individual workers here," Dean Gordon S. Brown, '31, of the M.I.T. School of Engineering, pointed out. Automatic control has become a sacred cow there, he continued, because it is needed badly if they are, as they claim, to overtake the U.S. The point for us to realize, he concluded, is that the Soviets can play havoc with the orderly economic system of the free world if they want to, because by their totalitarian system they can set prices on goods that have the desired political effect, regardless of the cost.

The Shakespearean Imagination

EVERY Tuesday evening at 7:30 P.M., now, Norman N. Holland, '47, Assistant Professor of English at M.I.T., can be seen on WGBH-TV Channel 2 in and near Boston. He is giving a course entitled "The Shakespearean Imagination" for the Commission on Extension Courses of Harvard University. Professor Holland was formerly this educational station's "Film Critic." He is lecturing this year on 13 Shakespearean plays.

Freeing Children From Hunger

MANY CHILDREN in underdeveloped areas suffer from protein malnutrition. In the Indian village of Palin, Guatemala, parents recently were enabled to buy a new kind of food which will reduce such starvation. From three cents worth of it, three glasses of a drink can be made, each containing the same quantity and quality of protein as a glass of milk.

It is called Incaparina because the Institute of Nutrition of Central America and Panama (INCAP) was responsible for its introduction. INCAP's director, Dr. Nevin S. Scrimshaw, will come to M.I.T. next summer to head the Department of Nutrition, Food Science, and Technology (described below).

Incaparina is a mixture of vegetables which can be made into an "atole," or thin gruel, by adding water and cooking for 15 minutes. It can be served hot or cold, and flavored to taste with sugar and cinnamon, vanilla, or anise. Soon after it went on sale in Palin—a village of 4,500—1,200 bags a week were being consumed there. Arrangements since have been made for its production and sale in El Salvador, Honduras, Nicaragua, and some parts of the United States. Secretary of State Christian Herter has hailed its development as a "major breakthrough."

Dr. Scrimshaw described it during the International Congress on Nutrition in Washington this fall, and declared: "It is certain that products similar to Incaparina can be developed in other areas by taking advantage of those local food sources most readily available at low cost."

M.I.T.'s New Food Program

AS PART of the broad development of life sciences at M.I.T., the Department of Food Technology is being reorganized and will be known henceforth as the Department of Nutrition, Food Science, and Technology. More emphasis will be placed on the basic science and biological aspects of nutrition, and the Department will offer greatly extended curricula and research activities.

Samuel A. Goldblith, '40, the Department's Acting Head since the death of Professor Bernard E. Proctor, '23, will be its executive officer. Starting next August 1, its head will be Dr. Nevin S. Scrimshaw. He will continue an association with the Institute of Nutrition of Central America and Panama, and Institute students will benefit from close co-operation between M.I.T. and this international agency, which has a far-reaching program.

Now 42 years old, Dr. Scrimshaw is also a regional adviser of the Pan American Health Organization, the Regional Office for the Americas of the World Health Organization; an adjunct professor of public health in Columbia University; and a visiting lecturer in the Harvard School of Public Health. He holds the degrees of master of arts and doctor in zoology, doctor of medicine, and master of public health. He has studied a wide range of problems, including the physiology of development, vitamin assays and metabolism, nutritional factors in pregnancy, endemic goiter, protein and amino acid metabolism, nutrition and infection, and other aspects of clinical and public health nutrition. He



Dr. Nevin S. Scrimshaw is coming from Guatemala to participate in M.I.T.'s development of the life sciences.

received the Meade-Johnson Award of the Rochester Medical Society in recognition of his research on toxemia in pregnancy, is a member of many learned societies, and an honorary member of the Pediatric Society of Guatemala.

Dr. Scrimshaw and his family have made their home in Guatemala City for the last five years, but his recent work has involved him extensively in world as well as regional nutrition problems. In addition to studying protein and amino acid requirements, he has been involved in studies of disease and environment, how the body's use of fat is affected by diet, and how these factors in turn influence cardiovascular disease.

The department that he will head at M.I.T. has had a wide influence on the American food industry and the eating habits of the nation. It will continue its work in food technology and also emphasize food science and basic research oriented toward problems of human nutrition. In describing the change, Dean George R. Harrison of the School of Science called it "fairly radical" because it means "both an extension into new fields and strengthening of the food technology program in the direction of more basic research, particularly in the area of food toxicology and the effect of food processing on its nutritive value."

Robert S. Harris, '28, Professor of Biochemistry of Nutrition, participated in the meeting of Central Americans which led to the establishment of INCAP, and suggested at that time a co-operative arrangement with M.I.T. such as is now planned. "I hope it will be possible," says Dr. Scrimshaw, "for selected students to do Ph.D. thesis work at INCAP, and for physicians to receive training and experience in clinical nutrition, public health nutrition, and the appraisal of nutritional states in summer courses at INCAP."

Civil Engineering's Future

MAJOR CHANGES were made in the undergraduate Civil Engineering (Course I) program at M.I.T. this fall. While maintaining the strength of portions of the previous program, the new curriculum nevertheless represents an appreciable modification of the classical images of civil engineering, reflecting the trend to devise new courses that will meet the demands of the future and take advantage of the special characteristics and capabilities of M.I.T. students.

Modern physics, thermodynamics, fluid dynamics, electrical engineering, particulate mechanics (the study of particles such as those in the soils), and materials engineering are among the subjects now offered. Additional requirements include statistical theory and mathematical methods in civil engineering, including operations research and computer methods.

The Department of Civil Engineering also has developed subjects in co-operation with other departments covering such fields as geotechnical science and biological, social, and political factors in engineering.

The student still takes subjects such as structural analysis and design, hydraulic engineering, and transportation engineering as part of his program, but with the broadened base in science and mathematics there is less emphasis on professional specialization.

In making these changes, the Institute's Faculty is looking to future trends. (See "Civil Engineering's Scope Now," by John B. Wilbur, '26, on page 31.)

The 10-to-the-10th Event

A FAR GREATER cosmic-ray shower than ever was detected before fell last December on the Laboratory for Nuclear Science's Volcano Ranch Research Station near Albuquerque, N.M. It was described, when announced last summer, as a 10-to-the-10th event, because 10 billion particles rained down on the station's counters. It was three times as intense as the record shower caught

by the tubs set out at the Harvard Agassiz Observatory in 1957.

Calculations showed that the energy of the cosmic ray that caused the great shower to fall in 10 millionths of a second must have been between 20 and 40 billion billion electron volts. This is at least 500 million times the highest energy imparted to a particle in a man-made atom smasher.

Bruno B. Rossi, Professor of Physics, is convinced of the extragalactic acceleration mechanism for cosmic rays as a result of this and other recent discoveries. Now one of the most pressing questions facing the cosmic-ray physicists, says Stanislaw Olbert, '53, Assistant Professor of Physics, is the nature of the cosmic-ray particles. It has been assumed that most of the primary rays are protons, but ionized nuclei of heavier elements may be more abundant than has been thought.

John Linsley and Livio Scarsi reported the big shower. Their work was part of a broad research program supported by the National Science Foundation.

Who Tells Who Over There

How is scientific and technical information disseminated in the Soviet Union? Since the system of exchanging information there was developed under different circumstances than have prevailed here, a study of it may reveal different approaches and solutions to problems that confront researchers everywhere. To learn more about it, the National Science Foundation has arranged for a comprehensive, two-year, M.I.T. study of the Soviet system. Boris I. Gorokhoff, formerly of the Library of Congress, is joining the Institute staff to devote himself to this investigation.

The nature, purpose, organization, and financing of information dissemination in the U.S.S.R. will be examined. The study also will cover recent major changes, and the newly formed Council for Cybernetics and its activities.



A DYNAMIC TESTING device for auto suspensions interested Douglas P. Adams (left), Associate Professor of Engineering Graphics, during a General Motors conference at its technical center for engineering and science educators. C. Elbert Valentine, 3d, '57, of the GM engineering staff, discussed its operation with his guest from M.I.T.



HEADED FOR NIGERIA, William L. Hooper, '57, was briefed by Dean Howard W. Johnson (left) and Carroll L. Wilson, '32, of the School of Industrial Management. Mr. Hooper is one of eight recent M.I.T. graduates now on two-year tours of duty in Africa under a program for providing assistance in the development of new countries.

Useful Belts in the Sky

WALTER E. MORROW, JR., '49, of M.I.T. Lincoln Laboratory described a new and novel global communication system at this fall's meeting of the International Scientific Radio Union in London. Known as "orbital scatter," it would utilize the reflective properties of thin belts of metallic fibers (or dipoles) sown in the sky at an altitude of several thousand miles.

These fibers could be only about half an inch long and one-third the diameter of a human hair. They could be so strewn out that the average distance between fibers would be a thousand feet. Yet men could communicate by radio between distant points on the earth's surface by training their transmitting and receiving antennas on such a belt. A great many exclusive communication circuits could operate simultaneously. And two such belts—one orbiting above the equator and the other over the North and South Poles—would make continuous communication possible between any two points on earth.

A belt could be established, it is believed, by gradually releasing millions of fibers from a container ejected from a rocket in the desired orbit. The belt could be so designed that its lifetime would be a matter of months or years. It would not be affected greatly by solar radiation pressure, atmospheric friction, magnetic fields, micro-meteorites, or high-energy particles. Nor would it interfere seriously, those who have suggested it say, with astronomical observations or the use of space for other purposes.

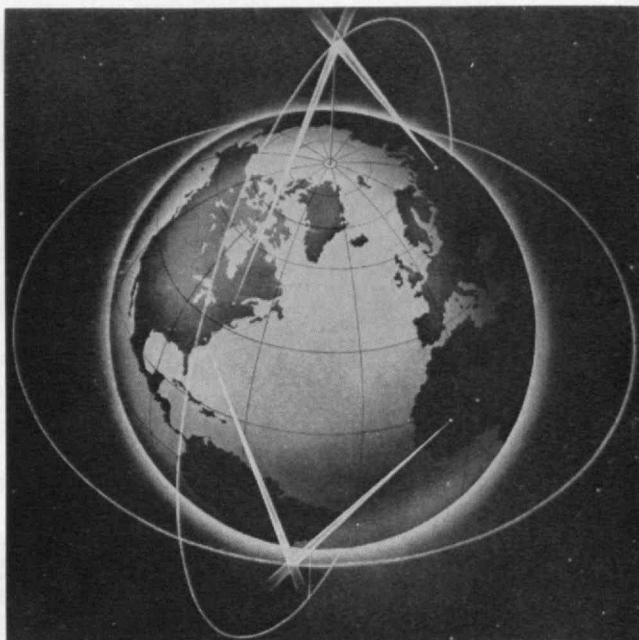
Tuned to resonate at radio frequencies near eight kilomegacycles (8,000 million cycles per second), the "dipole" fibers resemble the familiar dipole antennas used for TV and FM reception. At these frequencies, they scatter radio waves so efficiently that only nine ounces of copper dipoles (with a projected area of less than 20 square feet) would produce as strong an echo as the 100-foot-diameter space balloon Echo I, which has a projected area of almost 8,000 square feet. The balloon, on the other hand, reflects equally well over a very wide range of radio frequencies, but is relatively difficult to track with large antennas as it speeds across the sky.

Since the belts would be relatively stationary in space, no high-speed tracking equipment would be needed to keep radio antennas trained on them. And since all of the active radio equipment would be on the ground, the communication system envisioned could be highly reliable.

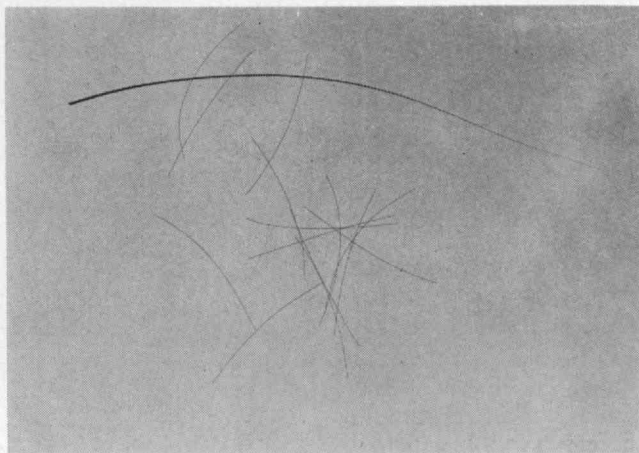
Mr. Morrow developed the basic concept in collaboration with Harold Meyer of the Thompson-Ramo-Wooldridge Corporation. Lincoln Laboratory now is preparing experiments to test the feasibility of the technique and confirm the results of theoretical studies.

Pressure on Echo I

AT AN ALTITUDE of 1,000 miles, 10 cubic miles of air weighs only about as much as one cubic inch at sea level. While a few men were bouncing signals off Echo I, and most of us were just admiring it, last summer, others sought accurate values of the air's density up there and looked for the effects of solar radiation pressure. Their orbit measurements confirmed a theory con-



Two "orbital scatter" belts of tiny metallic fibers in sky could relay radio messages over very long distances.



A cat's whisker (at top) about two inches long would dwarf the fibers sown in the sky for such a communication system.

cerning the impact of solar pressure which had been advanced by Harrison M. Jones and Irwin I. Shapiro of M.I.T.'s Lincoln Laboratory and R. W. Parkinson of the Thompson Ramo-Wooldridge Corporation.

The total force of solar radiation on the balloon is quite small—estimated to be about equal to the weight of a salted peanut—but the balloon is so light that the effect on its orbit is quite dramatic. The altitude at perigee—the point of closest approach to earth—was observed to decrease by more than 27 miles during the first 12 days after launch, strictly in accordance with the theory, which further predicted that the decrease would continue for about five months and a total decrease of 400 miles in perigee altitude, if the balloon remained reasonably intact. The altitude should then begin to increase again, and continue to oscillate over a 400-mile range for several years to come.

The ability to predict the effect of solar pressures on large, lightweight satellites will clearly be helpful in determining the optimum orbits and launching times for specific missions.

Second Century Fund's Leaders

See M.I.T.'s Expanding Needs

Faculty and Alumni emphasize educational excellence and service to the nation in explaining the program to increase the capital funds

EDUCATION IS "at the heart" of M.I.T.'s Second Century Fund, John J. Wilson, '29, its general chairman, declared at the Fund's Leadership Conference, September 9 and 10 in Cambridge—and this was the tenor of the whole two-day meeting. More than 200 Alumni and friends of the Institute, representing 55 classes and 29 states, met to hear talks by Alfred P. Sloan, Jr., '95, the Fund's Honorary Chairman; James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation; President Julius A. Stratton, '23; and many other spokesmen for the Faculty and Fund.

"Successful achievement of any kind guarantees expanding needs," President Stratton declared in opening the conference. The 66 million dollars that the Institute is seeking, he emphasized, will be used not to enlarge M.I.T., but to enable it to continue to meet the needs of the times and the country.

"The Institute," said Dr. Killian, "is making up for lost time." During the war, its people devoted themselves unstintingly to the war effort. In the quarter century prior to 1949, the Institute made no substantial effort to augment its capital funds save for small amounts to build a dormitory and a swimming pool. "The result is," Dr. Killian pointed out, "that today we find the Institute is inadequately capitalized to carry its present program and to take care of improvements."

A further reason for seeking capital funds now, he continued, is the rapid and, in fact, desirable obsolescence of its plant, equipment, and programs. By its own action, if it is successful, an institution such as M.I.T. creates change and new



In the Laboratory for Nuclear Science, experiments in space and the apparatus built to perform them intrigued Alumni visitors.

knowledge, which produces new obsolescence.

"From its beginning," he recalled, "M.I.T. has been the embodiment of a new ideal in education. M.I.T. has always possessed within itself the seeds of further strength, and it has steadily proved itself by serving the nation well. And so today, its surging intellectual vitality, its momentum, and its latent capacity for further greatness are at new highs. With this kind of institution,

and with its superbly creative Faculty and student body, we may expect it always to be providing ample justification for additional resources."

Teaching and Research

Gordon S. Brown, '31, Dean of the School of Engineering, declared that the Institute's strength lay in the interplay of research, undergraduate courses, and graduate work. "We are convinced," he said, "that the



William E. Barbour, Jr., '33, and Patrick D. Wall on biology tour.



Richard H. Catlett, '17, speaking to Fund Chairman John J. Wilson, '29.



Frederick H. Dierks, '12, and Louis J. Darmstadt, '26, at the dinner.



Mrs. Robert C. Dean, '29, and Dorothy W. Weeks, '23, examining a model.



William H. Coburn, '11, and Norman I. Sebell, '44, listen to Professor Irwin W. Sizer describe electrodes used to study cells.

effective pursuit of new and emerging areas can best be carried on through the development of Centers, where staffs from many departments can intermingle."

C. Stark Draper, '26, Head of the Department of Aeronautics and Astronautics, described the ways in which his Department endeavors to make the most effective use "of each heartbeat of the student and instructor." Its faculty, he declared, is "quite closely coupled to the envi-

ronment," and the Instrumentation Laboratory not only has contributed greatly to the nation's strength by its research but has made "the internship type of teaching" available.

Irwin W. Sizer, Head of the Department of Biology, reviewed the last two decades of growth in interest in the study of living organisms on the molecular level, and showed impressive pictures and models of biological molecules. William P. Allis, '23, Professor of Physics, told a

similar story of increased interest and progress in the study of plasma physics. (See page 27.)

John T. Rule, '21, Dean of Students, introduced Joseph Harrington, 3d, '61, and Douglas A. East, '55. Mr. Harrington described his work in economics and nuclear engineering, and emphasized the diversity of M.I.T. undergraduates' interests. Mr. East told how, as a graduate student and instructor, one "works

(Concluded on page 54)

A Duty to M.I.T. and Society

IN AN ADDRESS to Second Century Fund leaders, at their meeting in Cambridge on September 9, Alfred P. Sloan, Jr., '95, their honorary chairman, spoke as follows regarding the Institute:

WE, THE ALUMNI, in promoting the interests of the Institute, should look upon our doing so not only as an obligation to a great scientific and educational cause but as a partial payment of the debt we owe the Institute for services rendered to us, as undergraduates, enabling us to qualify for the opportunities and obligations of the world in which we live. There is no greater responsibility than to pay one's debts.

M.I.T. has passed through various phases in the evolution of years. When I was an undergraduate, Technology ranked as little more than a leading engineering school. Inspired by the imagination, the talents, and the leadership of the late Karl T. Compton, Technology emerged from the status of an engineering school into a great scientific institution, thus enormously enhancing its responsibilities for service to our society, not only in the area of education but in all the various areas of scientific research. The Alumni, as I see it, owe and should recognize a deep obligation to the memory of the late Dr. Compton, by not only making it possible to strengthen the scientific concept conceived by him but to erect on that foundation a great superstructure of constantly expanding service in recognition of the changes of time.

It is well said, I believe, that in our system of private enterprise—and I do not know that education is any different—most components are available to all who can qualify. The great differences between mediocrity and a high level of accomplishment are the people involved, their leadership, and how they work together.

Since I was relieved from the confines of General Motors, and have had an opportunity to look around, especially in the area of education, I am constantly impressed with the broadly accepted recognition of Technology as the leading technological institution, not only in this country but in the world at large. That fact stands out crystal clear. *It may be difficult—as a matter of fact, it is difficult—to reach the top, but it is far more difficult to stay there than to get there.* Hence, we get back to the significance in any type of human effort of the people involved, their leadership, and how they work together.

Certainly we, the Alumni, would be derelict in our duty to the Institute and to our society, to say nothing of ignoring our opportunities, if we failed to appreciate our outstanding leadership and the competence of that leadership and to rally our loyalty, our confidence, and our maximum effort to the support of Dr. Killian, Dr. Stratton, and their able group of scientists and educators, by providing the

essential ways and means, or the tools, to capitalize the talents thus available to us and to utilize the expanding opportunities for service that continually present themselves. . . .

☆ ☆ ☆

Our world is in a state of unstable equilibrium—in a mess, perhaps better describes it. Grave danger lurks in many areas. It appears that the decade of the '60's may well be the most critical period of the Twentieth Century. The prime question before the world's leadership is: What must be done about it? Undoubtedly, military power is a deterrent against physical attack; more militant leadership may help; financial aid to less advanced countries perhaps offers a worth-while piece of expediency; and the encouragement of more social, educational, and creative interchanges between peoples, made feasible by advanced means of transportation, offers, I believe, the promise of something worth while. But, is it not true that in the final analysis the basic cause for the world's unrest, and the danger that exists today, in a climate of apparent prosperity, is lack of knowledge, or ignorance, expressing itself in far too many areas in appallingly low standards of living and appallingly high levels of political incompetence, dominated by ignorance and selfishness? How can the world's free institutions be expanded and strengthened in such a background?

It may be academic to say that knowledge is the means of promoting progress and security along the whole front of human endeavor. It is a fact nevertheless. Social values, economic values, scientific values, human values involving human behavior—political and moral, health, security and spiritual values—all have their roots in knowledge and can thrive only in an atmosphere of expanding knowledge and understanding. And is it not true that education is the catalyst, or creative instrumentality, upon which the expansion of knowledge depends? *Education could be the significant factor in the survival of our existing civilization.* Does not such a concept, looking over our immediate horizon into the great beyond, broaden our responsibilities to the Second Century Fund?

☆ ☆ ☆

The goal of the Second Century Fund is an ambitious one. I am quite convinced that it has been most thoughtfully developed. Each component part might be looked upon as a building block in an imaginative vista of a great superstructure of constantly expanding service based upon a broad and solid foundation of scientific and educational accomplishment. Each such building block is an essential part of a co-ordinated and balanced whole. *To obtain our objective will not be easy. It will require hard and aggressive work. But it can be done.*

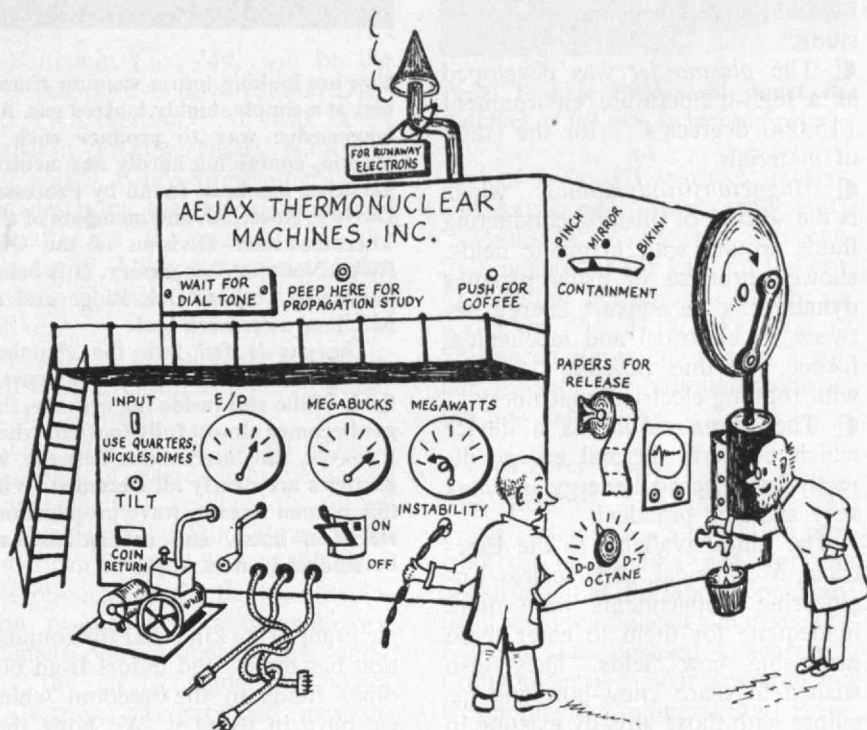
Plasma Research: A Case History

The men who spend "big money" for Uncle Sam now were trained when support was meager and only "fuddy-duddies" really cared

PROFESSOR WILLIAM P. ALLIS, '23, candidly summarized the history of plasma physics for M.I.T. Second Century Fund leaders at their meeting in Cambridge this fall. Plasmas are ionized gases, consisting partly of neutral atoms and partly of atoms from which an electron has been removed. Professor Allis' account of this wonderland follows:

THE ORIGINATOR of plasma physics in this country was Irving Langmuir, some 30 years ago, whose interest in this field was stimulated by the importance of mercury rectifiers. His successor in this field was Karl T. Compton, who was later deflected into administrative work. My interest originated from my postgraduate work on atomic cross sections with Arnold Sommerfeld in 1930 and continued because the new-fangled quantum theory was too difficult for me. I struggled rather vainly with Boltzmann theory until 1941 when Sanborn C. Brown, '44, a student of Robley D. Evans, came to me with a stack of data on Geiger-Müller counters and asked for help in developing a theory for them. This started a fruitful collaboration of theorist and experimenter.

World War II interrupted our work, but then supplied a vital element: We fell heirs to the microwave equipment and techniques of the Radiation Laboratory, and this directed our efforts into microwave discharges. A fourth element, money for research assistantships, was supplied by the armed services through the Research Laboratory of Electronics. These four elements plus the students constituted "a plasma school" of about 12 people with a budget of \$60,000. This was then practically the only "plasma school" in the country, the one at the University of California under Leonard Loeb being relatively small.



"Well, at least we got the water back."

Basic plasma research is seldom photogenic. Professor David J. Rose, '50, of M.I.T., drew this cartoon for colleagues studying thermonuclear reactions.

We have trained some 30 Ph.D.'s, the most prominent among whom is Benjamin Lax, '49, the Director of our new Magnet Laboratory which is being erected on Vassar Street. He was one of the first to study the effects of a magnetic field on a plasma. The recent explosive growth of interest in plasmas is entirely connected with their interactions with strong magnetic fields.

In 1952 the possibility of controlling a thermonuclear reaction in a magnetic bottle was glimpsed, and the Atomic Energy Commission embarked on a gigantic effort to beat the Russians in doing so. Both sides lost in this contest. M.I.T. voluntarily refrained from participating in this effort at first because of the security restrictions, but now that

the security has been relaxed we have an A.E.C. contract of \$250,000 which supports about 30 people. It is unclassified and of great educational value. With it we do much of the truly basic research for the A.E.C. The thermonuclear research budget of the A.E.C. amounted in 1959 to \$27,000,000, the largest contracts being with Princeton, the University of California, and Union Carbide, for research with colossal machines in laboratories off-campus which, therefore, have little educational value. Only 1 per cent of this budget goes to education.

In the meantime the universal importance of plasmas was being "discovered":

☛ The small magnetic fields in *interstellar space*, because of their

great extent and because of the conducting plasma between the stars, were found to be strong enough to pull the stars into the spiral arms of the galaxies, and to accelerate cosmic rays.

☐ Probing satellites discovered belts of plasma, the *Van Allen layers*, around the earth.

☐ *Re-entering missiles* generated plasmas in the atmosphere hot enough to melt their nose cones.

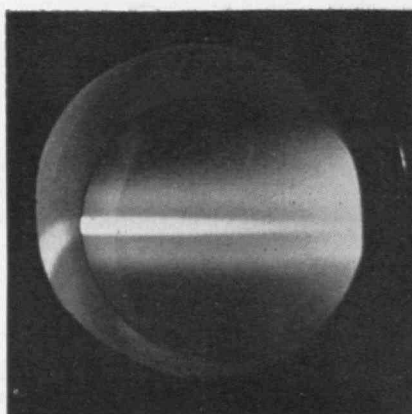
☐ The *exhaust jets* of rockets are themselves plasmas and worthy of study.

☐ The *plasma jet* was developed as a high-temperature environment (15,000 degrees C.) for the study of materials.

☐ *Magnetohydrodynamics*, which is the science of pushing conducting fluids around with magnetic fields, showed promise of using plasmas dynamically to convert energy between its electrical and mechanical forms, and thus possibly do away with rotating electrical machinery.

☐ The *plasma diode* is a device which converts thermal energy directly into electrical energy and may very soon be practical.

The funds available to the Electrical, Mechanical, and Nuclear Engineering Departments were quite inadequate for them to enter these promising new fields. They also wished to share know-how and facilities with those already existing in the Physics Department. To this end, funds were sought and a grant of \$500,000 for two years was obtained from the National Science Foundation. This is the largest sin-



You are looking into a vacuum chamber, at a simple, highly ionized gas. An inexpensive way to produce such a plasma, containing hardly any neutral particles, has been found by Professor David J. Rose, '50, and members of the Thermonuclear Division of the Oak Ridge National Laboratory. It is being developed both at Oak Ridge and at M.I.T. as a research tool.

The gas is fed into the chamber through a cathode within a magnetic field. While still inside the cathode, the gas becomes almost fully ionized; when it leaves, the interactions between its particles are nearly all electrical. With this plasma stream, wave propagation, electrical noise, and oscillations can be studied in new ways.

gle grant of its kind that the foundation has made, and differs from our other funds in the freedom which we have in using it. We hope that our results will be such as to encourage the National Science Foundation to expand this policy of granting funds to develop research in an area of science.

An interdepartmental committee was set up to co-ordinate the work in the Electrical, Mechanical, and Nuclear Engineering and Physics Departments, and the business office of the Research Laboratory of Electronics takes care of all administrative problems. We now have about 100 people working in this area, of whom 12 are professors, and a yearly budget from all sources of \$700,000. Departmental lines are so nearly erased in the research work that I hardly know which department any of my students belongs to.

In due time we will have close links—probably copper bus-bars—with the new Magnet Laboratory. Our requirements are somewhat different from those for solid-state research as we need smaller fields over larger volumes, but the current requirements are the same. Our most urgent requirement, however, is for a common roof under which we may work together.

The moral of this story is that the development curve for a research effort in any field has a long approach followed by a steep front and a slow decay. Government or other funds are generally available for the steep front, when the need is obvious, although even then most of the money goes into nonbasic research, and 1 per cent to education. But the long approach has to be done by the universities on their own funds, because the men who do this are “the fuddy-duddies who don’t see what is important.” Yet this is when the people are trained who will spend the big money later.

Pertinent Facts About M.I.T.

M.I.T. probably has the most comprehensive and varied research program in the physical sciences and technology to be found in any one place in the world. It has currently under way 900 separate research projects.

★ ★ ★

M.I.T. awards 13 per cent of the nation’s total output of doctorates in engineering and 10 per cent of all master’s degrees in engineering. The number of engineering doctorates awarded by the Institute is more

than double the number awarded by the second-ranking institution.

★ ★ ★

The Institute currently awards over 8 per cent of all U.S. doctorates in physics, and on no other single campus in the United States have so many doctorates in physics been awarded.

Harvard and M.I.T. stand first and second, respectively, and far ahead of most other institutions, in the number of National Merit Scholarship recipients enrolled.

M.I.T. virtually created the modern profession of chemical engineering and was the first technological institution to recognize and provide for economics as an important element in the education of the engineer. The Institute was the first school to establish courses in aeronautical engineering, architectural engineering, chemical engineering, food technology, industrial biology, marine engineering, and naval architecture.

★ ★ ★

Some 1,500 M.I.T. Alumni are presidents of private companies and institutions in the United States; about 1,200 are vice-presidents.

The Greatest Magnets of All Will Be at M.I.T.

THE CLASS OF 1964 at M.I.T. will watch as undergraduates the construction of a new national center for the study of magnetic phenomena. During the next four years, the apparatus needed to produce a continuous magnetic field of unprecedented strength will be assembled at M.I.T. Construction of a new laboratory to house it is scheduled to begin next year. When completed this laboratory will be the world's most advanced facility of its kind for research regarding properties of matter and energy.

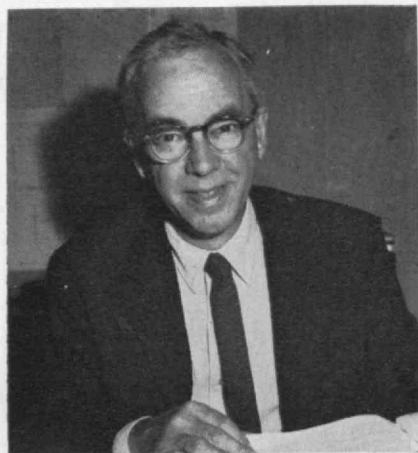
This will be the next leg of the "voyage of exploration" on which Professor Francis Bitter embarked more than a quarter of a century ago. In the 1930's he developed solenoid magnets, operated by a 1.7-million-watt power station, capable of sustaining a field of 100,000 gauss. These still rank among the world's great magnets, but those now being designed will be far more powerful. They will produce a continuous field of 250,000 gauss. This is 500,000 times the strength of the earth's magnetic field.

Professor Bitter has given up his position as Associate Dean of the School of Science to assume primary responsibility for the design and

completion of this facility. Since its program will be focused on earth and space science, as well as on electronics and atomic physics, he will be professor of geophysics henceforth rather than professor of physics.

Benjamin Lax, '49, will be the new laboratory's director, and Donald T. Stevenson, '50, will be its assistant director. Henry H. Kolm, '50, and D. Bruce Montgomery, '56, are designing the magnet and participating in the planning of the laboratory. All four members of this team are associated with Lincoln Laboratory, Dr. Lax as head of the Division of Solid State Physics, and Dr. Stevenson as a group leader in this division.

Dr. Lax, whose special field is the study of electrical properties of semiconductors, received the Oliver E. Buckley Solid State Prize of the American Physical Society this year. His research in the fields of cyclotron resonance in semiconductors, magneto-optic properties of solids, and the electromagnetic behavior of ferrites, has provided new insights into the basic electrical structure of solids. This kind of basic understanding is a vital link in the development of practical solid-state



Prof. Francis Bitter will direct the building of the new magnets.

devices such as transistors, masers, and ferrite microwave components.

James M. West, who was contract negotiator for Lincoln Laboratory before becoming associate director of the M.I.T. Division of Sponsored Research, will be assistant director for administration of the new laboratory.

An Air Force Project

The Institute and the U.S. Air Force concluded a \$9,502,000 contract several months ago for the construction of this laboratory. Plans for it were announced simultaneously by Lt. Gen. Bernard A. Schriever, Commander of the Air Research and Development Command, and President Julius A. Stratton, '23.

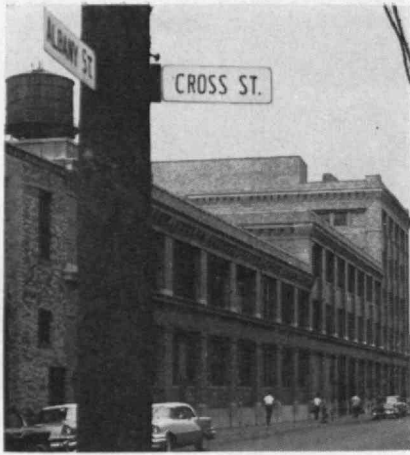
The over-all cost of constructing the laboratory was estimated at \$6,078,000 and \$3,424,000 was allocated for staffing and preliminary research. Of the total, \$5,600,000 was designated for construction and management during the fiscal year which began last July 1. The laboratory's annual research budget after it goes into full operation in 1964 is expected to be about \$2,000,000.

The new laboratory will be alongside the Institute's nuclear reactor on Albany Street, on a site occupied for many years by the Ward Baking Company's building. Most of this building will be razed, and construction of the new facility will begin soon. A two-story structure adjacent to eight magnet test cells and the power supply is planned to accommodate supporting shops and offices.

Jackson and Moreland, Inc., of Boston, which worked with Profes-



Benjamin Lax, '49 (left), will be the laboratory's director; James M. West (center) and Donald T. Stevenson, '50, will assist him.



The new magnet laboratory's site.

sor Bitter on the high-field magnet facility that he developed for M.I.T. many years ago, has prepared preliminary design studies, and is now furnishing engineering services.

Novel engineering solutions will be required both to provide the necessary power and to cool the magnets. An 8-million-watt power plant with an additional pulsed capacity of 32-million watts is planned. This plant will be capable of furnishing 40,000 amperes at 200 volts direct current on a continuous basis, and 160,000 amperes will be made available for two-second periods by using energy stored in large flywheels. The short-time, high-power operation will result in the produc-

tion of extremely intense magnetic fields with more volume than those produced on a continuous basis. Because of the heat that will be generated, large amounts of high-purity cooling water will be needed. This will be cooled by water pumped to the site from the Charles River.

The Research Program

The impetus for creating this new laboratory came from the active scientific program in solid-state physics at Lincoln Laboratory.

Magnetic fields govern and can help explain much of the behavior of atoms, atomic particles, and aggregations of atoms in solids, liquids, and gases. Magnetic phenomena figure importantly in cosmological theories as well as in studies of atomic nuclei. Increased understanding of such phenomena could prove helpful in many sciences, and in the solution of such varied engineering problems as the exploitation of materials, the improvement of communications, and the development of new sources of energy.

In explaining the new laboratory's program to the press, Dr. Lax pointed out that electrons and atomic nuclei are like minuscule spinning tops, whose motion is strongly influenced by a magnetic field, just as the earth's gravity causes a toy top to wobble around its stable po-

sition. The higher the magnetic field one attains, the easier it becomes to measure with precision the interaction of these electronic and nuclear tops.

An electron in a magnetic field goes in circles at a frequency which increases with the strength of that field. For a given field, this frequency is often much higher when the electron is in a solid than when it is in a gas. This frequency, moreover, can change if the direction of the magnetic field relative to the crystalline axes is changed. By measuring these frequencies physicists have explained some of the complexities of a large variety of materials.

Higher magnetic fields are expected to be helpful in ascertaining further quantitative details of nuclear structures and acoustical and optical phenomena. They will make it possible to study a greater number of semiconductors and metallic alloys than have been examined thus far.

"The new laboratory," Dr. Lax said, "will foster activities that enrich our knowledge not only of solids but also of gases, liquids, and ionized gases, and undoubtedly will contribute to our eventual peaceful use of thermonuclear energy and to the development of new electronic devices."

New Biology Laboratories

THE INSTITUTE's biology laboratories were enlarged this fall by a major change in the John Thompson Dorrance building. The greenhouse on its roof is gone, and its eighth floor is now the same size as those below it. The additional 2,900 square feet of laboratory space thus provided will be used mainly for research in embryology and tissue culture.

Eugene Bell, Associate Professor of Biology, will have an embryology laboratory at one end of the building, and James E. Darnell, Jr., Assistant Professor of Biology, will have a specialized tissue-culture laboratory at the other end. Dr. Bell is noted for his use of ultrasonic techniques to study the development of limbs. Dr. Darnell,

who is now working at the Pasteur Institute in Paris, will come to M.I.T. next year. Here he will be associated with Professor Salvador E. Luria in the study of such problems as how viruses invade cells. Space left available by moving Dr. Bell's laboratory to the eighth floor will be used to enlarge Professor Patrick D. Wall's neurophysiological laboratory.

Molecular and cellular biology will be closely integrated in the new laboratories' research program. It will include studies of bacterial genetics, enzyme formation within cells, metabolism of cells in tissue culture, and other phenomena in living cells. Mammalian cells will be grown, the way bacteria and experimental animals have been, in

controlled environments. Viruses are believed to figure in certain types of cancer, and this will be one of the possibilities explored. The opening of these laboratories, in fact, is the first stage of a long-range program planned to make the Institute one of the world's leading centers for the study of biology at microscopic and submicroscopic levels.

Building and equipping the new laboratories with air-conditioned, dust-free rooms, and the necessary sterilization, incubation, and other apparatus, has cost more than \$240,000, of which \$100,000 came from the National Institutes of Health. Anderson, Beckwith, and Haible were the architects; Severud, Elstad and Krueger, the Delbrook Engineering Company, and Edwin P. Mahard provided engineering services; and the Rich Construction Company, of Boston, was the contractor.

Civil Engineering's Scope Now

It fulfills human needs through adaptation and control of the land, water, and air environment

BY JOHN B. WILBUR

WHAT is a civil engineer? We recoil in dismay when we sometimes find that the public thinks of us as men in muddy pants, peering through transits; for we, of course, know better: We know that a civil engineer is one who uses science "plus" to fling gleaming spans across chasms, to carve the countryside with interchanges and with super-highways, to change the very geography of the earth with mammoth dams, and to rear mighty structures skyward where they stand undaunted through earthquake and storm. We know that a civil engineer may be a structural engineer, a sanitary engineer, an hydraulic engineer, a soils engineer, a building engineer, or—you name it.

Is it possible that, without our having realized it, the civil engineer, as such, has become something of a figment of the imagination? Has civil engineering become, in effect, a general term that embraces a variety of areas such as structures, transportation, and waste disposal, each important in its own right, but with little to relate them in underlying unity of purpose?

We deal primarily with public works, you may say. Highways, bridges, water supply, sanitation, and similar undertakings are so close to the social and economic welfare of people that they are primarily associated with government. Public works, together with corresponding engineering for industry, reveal the nature of civil engineering. Here, indeed, is a plausible characterization of our profession; but something of importance, it seems to me, has been omitted. For public works are not ends in themselves, but are built to perform certain functions; and when we begin to enumerate these functions we are back to transportation, waste control, water supply, and shelter—and still faced with the atomistic purpose of our calling.

Or again, it may seem to some of us that "construction" is the key word of the civil engineer; everything

JOHN B. WILBUR, '26, has headed the M.I.T. Department of Civil and Sanitary Engineering since 1946. As a participant in a Conference on Civil Engineering in Ann Arbor, Mich., last summer, he contributed the thoughts that are set forth in this article.



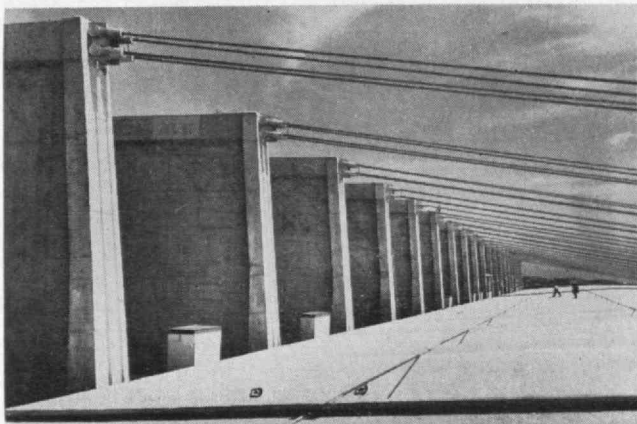
that he plans and designs, it may be pointed out, has true meaning only when it is translated into reality. Here is another plausible characterization of civil engineering; but here again we find no unity of underlying purpose. To construct something is no more an end in itself than to design public works.

If a young man is thinking of medicine, law, aeronautical engineering, or metallurgy as a career, an understanding of the underlying purpose of the field does not seem difficult to come by; but when we turn to civil engineering, this is more elusive. Unity of purpose in our field would not only help young people in their career decisions, but would help us design educational programs; indeed, it would inject a greater spirit of unity and clearer identity of goal into the entire civil engineering profession. It somehow should be made apparent to everyone that the civil engineer in the laboratory who is studying the turbulence of water is working toward the same basic objective as the civil engineer in the design office who is determining the proper thickness of a concrete shell.

Radioactivity's Threat

I cannot very well point out the need of a unifying theme of purpose in civil engineering without offering a suggestion as to the form that it might take. There are trends that we should be guided by. Among these are today's rapid tempo of scientific and technological advance, the explosion of population, and the rate at which we are plundering our natural resources. Associated with all three of these trends is the rate at which man seems to be poisoning—and in some instances strangling—much of the environment in which he lives.

The pollution of lakes and streams with sewage and industrial wastes, for example, has long been one of the problems to which civil engineers have addressed themselves. Now we are faced with a newer and graver situation, arising from the increasing importance of radioactive by-products. Not only health, but life itself may



An Idlewild building photographed by F. S. Lincoln, '22.

be at stake; the problem is pointed up when it is realized that by 1980, according to estimates, all the waters of the oceans will not be sufficient to dilute—within man's tolerance to radioactive substances—a single year's output of fission products.

Water, that essential of man's environment which frequently has been so plentiful that many of us have taken it for granted, is becoming a scarce commodity. It is estimated that by 1980 there will be 200 million people in the United States alone; three-quarters of this population will be living in industrial complexes extending continuously for several hundred miles along coastal waters and inland waterways. The quest for new sources of water to support these concentrations will be endless. We must find not only new sources but new methods of treating water—for it must be used and reused, and then used again.

Or let us turn to the air, so plentiful on clear days, yet so restricted at times that some of our metropolitan areas are faced with serious problems of smog. Hydrocarbons, which some believe to be cancer-producing, are being discharged into the atmosphere in tonnage quantities today, to say nothing of tomorrow. Methods must be found to control these airborne wastes.

Buildings and other structures not only control man's environment, but are part of that environment. I believe that we have gone too far in building structures "for the ages," so to speak—for permanence in structures, while sometimes desirable, is basically the equivalent of a long-term commitment to the shape of the world around us. Today, around many of our major cities, so-called "grey belts" are found, comprised of structures that have become obsolescent before they have reached the end of an otherwise useful life. We must find new building materials, new structural forms, new methods of construction and reconstruction—so that the structures we build in the future can be more economically changed or replaced.

The ground facilities for transportation are not only part of environment but exert a dominant influence on the development of environment as a whole. Mobility is one of man's basic needs, yet we are approaching a transportation crisis in this country—a crisis of which traffic strangulation in our cities today is but a single facet. Our dilemma of transportation is not going to be solved just by building more expressways or by tax relief for railroads, however important such steps may be. We need new forms of transportation, and we need to co-ordinate its various forms into total transportation systems. We need, too, to develop technical possibilities such as automatic controls for transportation, so that available space for mobility can be utilized more fully and safely.

I believe that from a consideration of these five areas—radioactive wastes, water shortages, air pollution, obsolescent structures, and traffic congestion—chosen somewhat at random from among the problems that must be faced primarily by civil engineers, my reference to the rate at which man seems to be poisoning and in some instances strangling the environment in which he lives becomes justified. These and other typical problems of civil engineering have three common denominators:

1) They all deal with the fulfillment of human needs on a large scale;

2) They all deal with the land-water-air environment; and

3) They all deal with the adaptation and control of that environment—using the term environment in a broad sense that includes land-based structures and facilities as well as the land, water, and air themselves.

These three common denominators may, if we choose, form the basis for a unifying theme of purpose for civil engineering. The theme suggested after serious consideration of this matter by a committee of my colleagues is: *The fulfillment of human needs through the adaptation and control of the land-water-air environment.* Environment is essential to well-being wherever man prevails—in the underdeveloped countries of the world as well as in our "overdeveloped" metropolitan areas—and it will be equally important, although in different ways, as man probes into space and finally lands on the moon.

The Roots and Tools

This theme in no way limits the scope of civil engineering; such basic objectives as mobility, shelter, health, and the like, are—and will always remain—among man's greatest needs. Neither does it suggest that there will not always be areas of proper specialization within the field. It does imply, however, that whether one processes fresh water from the oceans or disposes of fission wastes in glass capsules, designs monorails for a city or teams up photogrammetry with digital computers for automatic route location, builds plastic structures or stabilizes soil with chemicals, harnesses the waters in the interior of Africa or constructs DEW Line stations on the Greenland icecap, remains earthbound while doing such things or sallies forth to distant planets, one is in all cases striving to fulfill human needs through the adaptation and control of the land-water-air environment.

It suggests, too, that since civil engineering deals with man as well as with his environment, it has its roots not only in the physical sciences but in the earth, life, and social sciences. Building from these roots, the civil engineer is concerned with the engineering of components such as the structures, ground facilities and processes that comprise and control environment. Tomorrow he must go beyond this: To truly serve man's needs, these components must be engineered into environmental systems such as those involved in water resources and transportation—and these are systems that involve social as well as physical forces.

Modern technology, which in part has led to some of our great environmental problems, also provides powerful new tools to aid in their solution—analytical tools such as statistics and probability, operations research, and machine computation. We seem to be on the threshold of the capability of bringing these weapons to bear in a systems approach to the furthering of our objectives and thus of becoming the instigators of significant change in the engineering of man's environment.

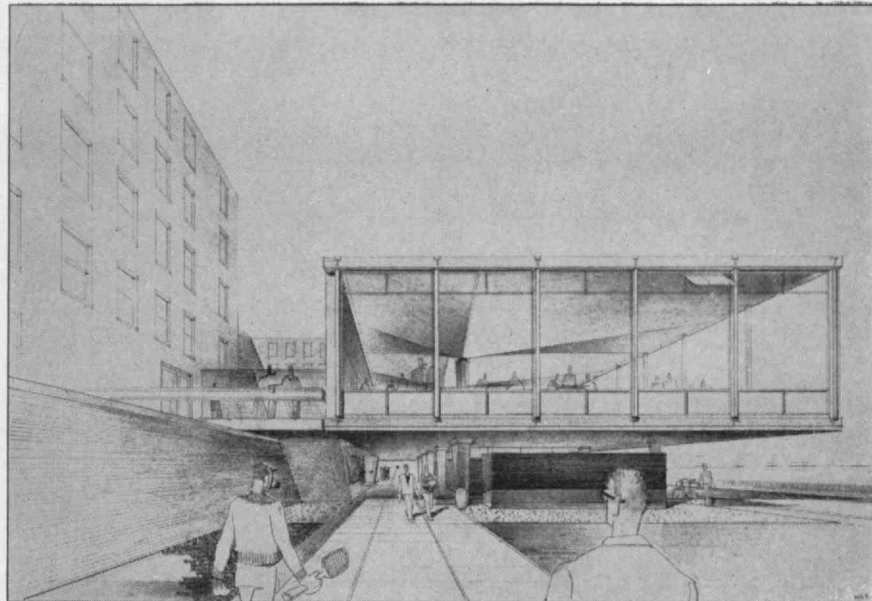
With such a theme, we can offer in civil engineering a sound and liberal brand of education that should have appeal to young men who are not only challenged by the intellectual rigor of science and mathematics but who, at the same time, are motivated to exploit the frontiers of science and technology for the direct benefit of man and of society.

New Dining Hall and Garage Will Open Next Year

A NEW DINING HALL for M.I.T. students, and a new parking facility for the Institute community, are nearing completion this fall. Construction of an addition to the Burton House dormitory and a four-story garage east of the old Radiation Laboratory began last summer and will be completed by the spring of 1961.

The New Meeting Place

The structure that is being added to the campus side of the former Riverside Apartment Hotel on Memorial Drive will provide a dining and gathering place for more than 550 students. It will be connected both to the section of the dormitory known as Alfred Edgar Burton House, in honor of the late Dean Burton, and to the section called Conner Hall, in memory of Arthur J. Conner, '88. It has been so designed that it can be divided later, if desired, into two dining rooms, each with its own serving counter. It will be used not only as a dining room but also as a study hall and for lectures and dances.



Students will use the addition to Burton House in many different ways.

Building, equipping, and furnishing this structure will cost about \$700,000. The Alumni Fund has contributed \$300,000, and the Institute proceeded with the work this summer with the help of a \$400,000 loan from the Community Facilities Administration of the Federal Housing and Home Financing Agency.

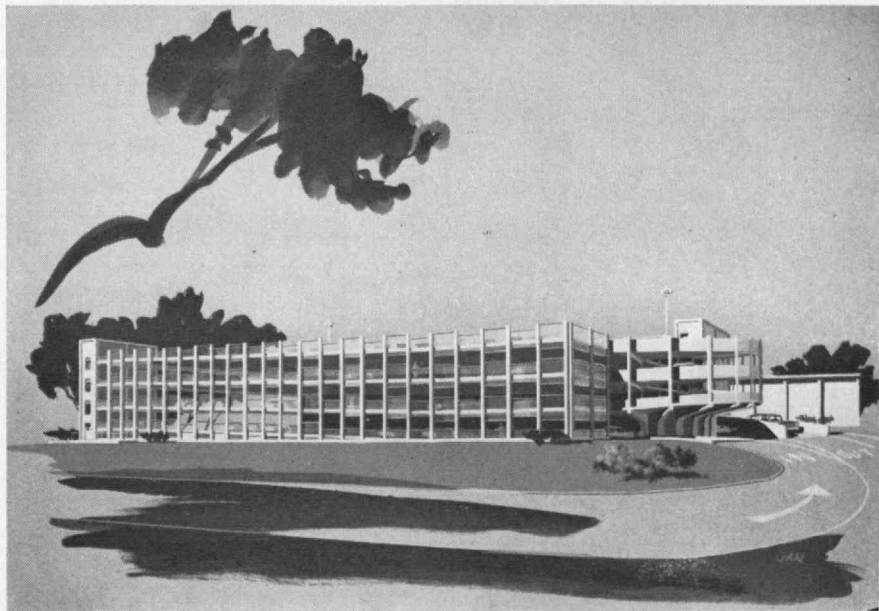
The 135 by 45-foot, air-conditioned dining hall will be at the level of the second floor of the dormitories. Additional student lounges on this floor may be provided later, and new exterior stairways will give occupants of both Burton and Conner direct access to this level. The

hall itself is away from the indented north wall of the existing building, at distances of 16, 24, and 52 feet; the space between is used for a new, modern kitchen on the upper level, and for receiving, dry-storage, and mechanical equipment on the lower level. The driveway behind the dormitory is being offset to the north of the dining hall, to a position appropriate for long-range campus development to the west. A broad walk, flanked by a brick bearing wall, passes beneath the dining room; it screens the delivery areas and leads to the two new entrances. Storage space for students' trunks and bicycles is also provided beneath the dining hall, but the top of the brick walls enclosing these storage areas is being kept well below the ceiling slab, so that the hall's structural system will be clearly expressed.

The roof of the new hall will be in five sections, each 27 by 45 feet and consisting of hyperbolic paraboloids of reinforced concrete veering out and up from a central column. The line of the five columns is off-center in the hall—to provide less visual obstruction, and to emphasize the outlook from the hall over the Institute's playing fields.

Both this dining hall and the new parking garage will be supported by pressure-injected footings, known as Franki piles, such as were used for the foundation of the David Flett du Pont Athletic Center on the west campus.

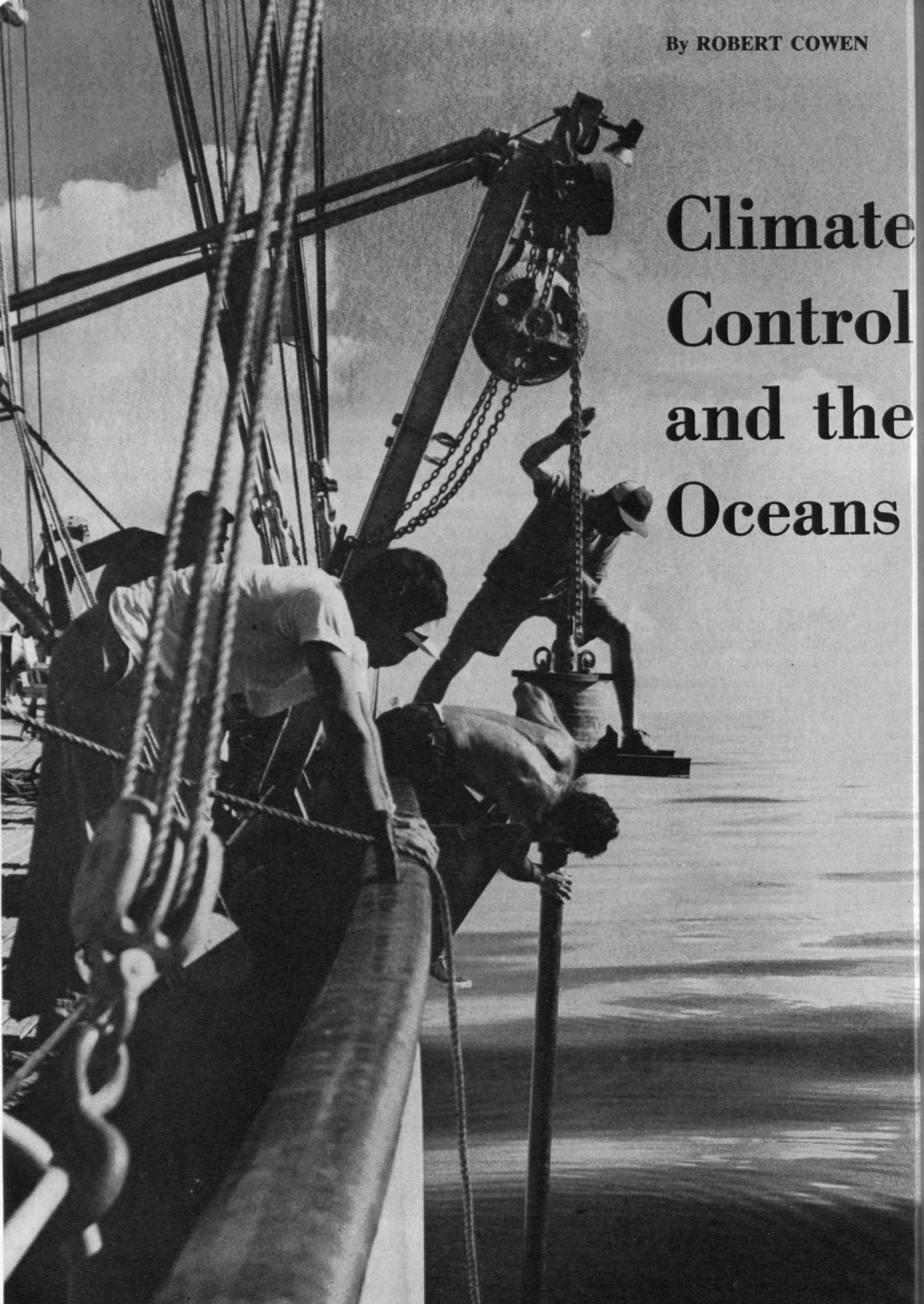
(concluded on page 52)



This new parking facility at M.I.T. will accommodate more than 400 cars.

By ROBERT COWEN

Climate Control and the Oceans



We are performing a carbon-dioxide experiment which may change our climate—and talking of further alterations in our environment without adequate knowledge of the earth's big flywheel

THE CLIMATIC influence of the oceans is familiar to all who live near the sea. Here seasonal extremes are less severe. Winters are milder and summers cooler. The warming influence of the Gulf Stream, which moderates the climate of Western Europe, is famous. This direct tempering of regional climates, however, is of secondary importance. The major climatic role of the sea is its function as the thermodynamic flywheel. Actually the icecaps are part of this flywheel mechanism too, for they can absorb and release heat by melting and freezing. But the oceans have by far the larger capacity.

If all of the solar energy reaching the earth for two and a half years were marshaled for the purpose, it would just be enough to melt the Antarctic icecap. Yet this same energy would add only about two degrees Fahrenheit to the ocean's average temperature. This great capacity means that a prodigious excess of heat can be stored in ocean waters for long periods of time without appreciably affecting the temperatures of the lower atmosphere. Conversely, the oceans can give up a large amount of heat to the air with hardly any change of average water temperature.

On the other hand, the ocean flywheel can't function efficiently unless there is effective overturning of its deep waters. If the ocean doesn't regularly bring deeper water to the surface and vice versa, its ability to exchange heat with the atmosphere is severely hampered. From the oceanographer's viewpoint, the puzzle of how the ocean flywheel operates breaks down into two broad questions: What are the mechanism and rate of overturning of the ocean waters? What is the "time constant" of the thermal flywheel? In other words, is the overturning of the oceans and their interchange of energy with the atmosphere characterized in terms of decades, centuries, or millennia? Is the overturning a more or less continuous process or, as one expert put it, "intermittent like the flushing of water in a bowl?"

At present, oceanographers can only guess at the answer. . . . Without a clear picture of how the ocean overturns and with no accurate time scale for interaction with the atmosphere, oceanographers and meteorologists alike are at a loss to explain adequately the general mechanism of the earth's climate. Now man, with his carbon-dioxide-producing industry, has become yet another unknown modifying factor.

The influence of this new and geologically unique factor may be operating in any of several directions. It could be tending toward a new ice age or could just as likely be producing another great tropical epoch like

ROBERT COWEN, '49, is natural science reporter for The Christian Science Monitor, and lives in Concord, Mass. His new book, *Frontiers of the Sea*, published this year by Doubleday & Company, Inc. (\$4.95), covers many problems studied at M. I. T. This is an excerpt from it.

that prevailing when coal and oil deposits were laid down. Perhaps its influence is more moderate than such extremes suggest. The interactions are so involved that experts do not yet know how to sort them out. One thing they are sure of—this influence is at work on a scale to dwarf all previous changes man has made.

Our Fires' Effect

To be precise, the carbon dioxide experiment began with the industrial revolution, when men started burning fuels in unprecedented amounts. Since the beginning of that revolution they have produced something like 12 per cent of the total carbon dioxide already present in the air. The capacity of the oceans to absorb this gas is enormous, however. Most of the excess produced in the past century probably has been removed in this way. The next century will be different. Dr. Roger R. Revelle of the Scripps Institution of Oceanography, estimates that 1,700 billion tons of carbon dioxide will be produced by man's fires during those hundred years. This is about 70 per cent of the amount of that gas now in the atmosphere. However, no one knows how much of this actually will accumulate.

Dr. Columbus Iselin (Professor of Oceanography at M.I.T.) has outlined a theory which, though it is speculative, at least indicates what might happen. He first points out that oxygen measurements below 800 meters' depth in the Atlantic show less oxygen content than they did 30 years ago, indicating that at least the Atlantic Ocean waters are not being renewed by overturning at the present time. The reason for this, he explains, may be the relatively warm climate of the past few decades. The ocean won't overturn until the climate turns colder. Unless this happens, the polar regions won't be cold enough to produce the cold dense water that sinks and generates bottom currents which, flowing toward the equator, push warmer water to the surface and cause the oceans gradually to overturn. At the same time, he adds, if the ocean doesn't overturn, its ability to exchange heat with the atmosphere will be hampered and its ability to absorb carbon dioxide will be cut down.

These effects would probably have an important but unpredictable influence on the weather. If the ocean's ability to soak up carbon dioxide is reduced, this would increase the greenhouse warming effect as more of that gas accumulated in the atmosphere. Thus there may be a climatic persistence effect due to the oceans which enhances warming after such a trend has started. Once the climate has warmed up to a certain point, the oceans would stop overturning. Because less carbon dioxide would be removed from the atmosphere, this in turn would accentuate the warming trend, which would then tend to persist.

Climates long ago are learned from cores of material from the ocean bottom. At the left, a piston coring tube is seen being lowered from the Atlantis. Sediment cores 30 feet long have been obtained this way.

Iselin says that something like this may have happened in climatic regimes in the past. He points out that if oceans don't overturn, the oxygen in deep water is gradually used up. In such oxygen-depleted water, marine life ceases. Organic refuse, formerly eaten or decomposed by deep-water creatures and micro-organisms, will accumulate on the ocean bottom as it rains down from the relatively abundant life of the surface waters. These are conditions for forming coal and oil. At the present rate with which deep-water oxygen in the Atlantic seems to be decreasing, Iselin estimates this oxygen-depleted condition would be reached in a thousand years.

Added to any such persistence effect of the oceans is the cumulative influence of the flood of man-made carbon dioxide. "This is the big climatic experiment," Iselin says. "One of its questions asks if we are helping to slow down ocean overturning and its attendant effects on the weather. Are we making a tropical epoch or are we, perhaps, starting another ice age? We don't

know enough about the oceans and the weather yet to be sure which way the effect will go."

What is needed are accurate world-wide carbon dioxide measurements. The first really good census of this gas in air and ocean was made during the IGY. With these data, charts are being drawn up indicating sources and sinks of the gas and its movements and accumulation around the world. In other words, they help define the regions where carbon dioxide is being added and, by comparison between charts drawn for different times, aid in estimating how fast it is being added. Likewise, they trace out regions where the gas is absorbed and help fix the rate at which it is removed from the air. This is an important step in determining the carbon dioxide influence on terrestrial heating and on the weather.

But whether or not men are hastening its advent, there is reason to believe that the earth is heading into another ice age. Four times in the past million years the ice sheets have advanced, and four times they have retreated. We now seem to be living in an interregnum between the last advance, which ended 10,700 years ago, and a new glaciation that may come in the millennia ahead. If geophysicists understood the mechanism of the ice ages, they would probably be able to assess the course the carbon dioxide experiment will take.

Frozen Paradox

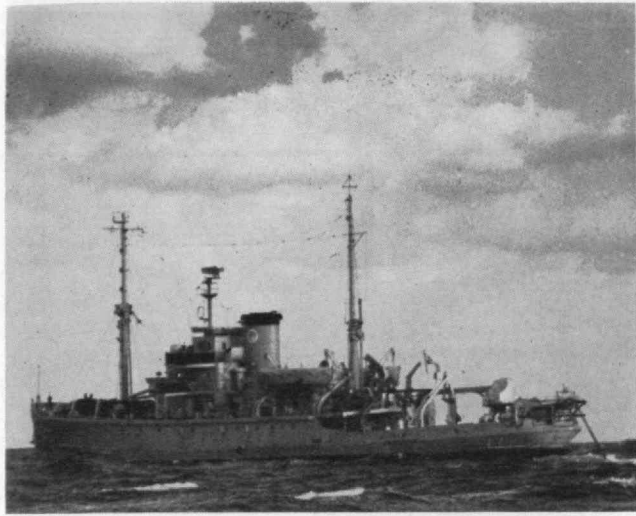
The earth is by nature a semi-tropical planet. It has been relatively warm and moist throughout much of geological time. For 90 per cent of the past half billion years, the post-Cambrian eras, its average surface temperature has been 72 degrees Fahrenheit in contrast to the present average temperature of 58 degrees. Tropical and subtropical climates prevailed to high northern and southern latitudes. Even the poles were ice-free. For such a dulcet planet, the terms "ice age" and "glacial epoch" seem paradoxical. Yet every so often the heat engine that maintains the climatic balance shifts gears, and ice sheets creep over land and sea.

There have been three of these glacial epochs since Cambrian times and at least five before that. They seem to have come at more or less regular intervals of 250 million years. Each has lasted only a few million years and may have been split into several distinct ice ages when glaciers alternately advanced and retreated. The last glacial epoch had five such advances and retreats. The Quaternary period, which includes the Pleistocene glacial epoch and which began a million years ago, has already had four ice ages. A fifth ice advance may come within the next 75,000 years or so, although the present climate is gradually warming up. Dr. Hurd C. Willett of the Massachusetts Institute of Technology, a meteorologist who has specialized in climate trends, estimates that the world at present has come two-thirds of the way between the climatic extreme of an ice age and the warm peak of an interglacial period. What causes the periodic icy departures from the earth's normal climate? Why does the great heat engine shift gears? This is another fundamental question for which geophysicists can only guess at the answer.

There has been a plethora of theories to explain the shifts of climate—far too many to detail them here.



Setting a buoy in the Gulf Stream system to study sub-surface direction of a current, from the R. V. Crawford.

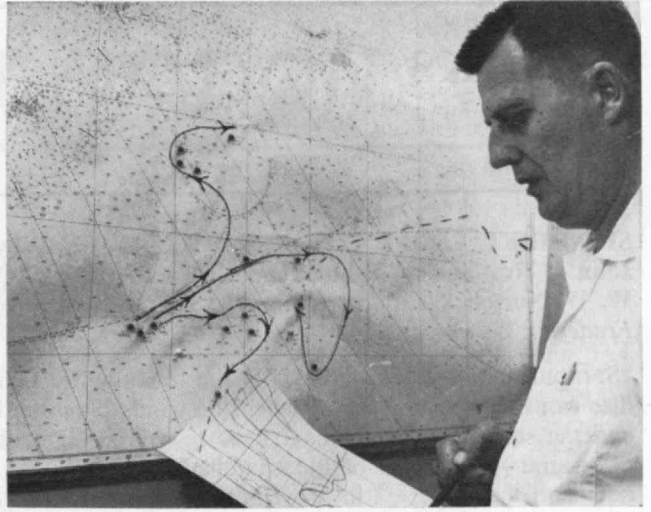


Towing a chain down to 600 feet from the R. V. Chain of Woods Hole during the examination of the Gulf Stream.

Most of them, however, shake down into one of three general types. They either explain climate shifts by astronomical changes in the earth's relation to the sun; by strictly geophysical causes such as migrations of continents and poles, the uplifting of mountains, or the spreading of volcanic dust; or finally by solar effects—that is, changes in the energy output of the sun. These different types of theories were reviewed in the light of modern knowledge during a two-day conference on climatic change held several years ago by the American Academy of Arts and Sciences. The papers presented there were published in 1954. Although they are five years old at this writing, they still stand as an authoritative review of the field.

The consensus of the conference was that, while many things may influence the earth's climate, variations in the sun's output of radiation seem to be the one principal factor that could account for world-wide climatic changes, especially the major glacial epochs. For example, A. J. J. van Woerkom of Yale University explained how some ice-age theories have been built on the fact that certain slight and well-known variations in the earth's orbit and the orientation of its polar axis change the distance between the planet and sun from one winter (or summer) to the next and slightly alter the angle of incoming sunshine. These things would change the amount and nature of solar heating from one winter (or summer) to the next. There have been a number of theories that suggested these astronomical changes in the earth's relation to the sun could become significant enough to start the icecaps growing. But van Woerkom's calculations show that, while the changes would probably have some effect on climate, they are too small to account for glaciation.

Most geophysicists today do not believe there is enough evidence to support ice-age theories based on such geophysical effects as major shifts of the poles or the drifting about of continents either. But mountain building is something else again. C. E. P. Brooks, the great British climatologist, has noted that, just as the earth's normal climate is warm and moist, its normal geography is one of low-lying continents and widespread seas. And, just as the climate has been periodically interrupted by glacial epochs, the geography has



A. R. Miller comparing drifts of radiotransponding buoys used in survey of the Gulf Stream with ocean temperatures.

sometimes been drastically altered by epochs of mountain building. Brooks and others have thought the effect of the uplifted land in altering the circulation of air and oceans would be a sufficient cause for glaciation. Critics such as Willett point out, however, that, while there has never been a glacial epoch without continental uplift and mountain building, there have been epochs of uplifting with few or no glaciers. The current view is that, while uplifted land masses are probably a necessary base for the ice sheets, they can't cause glacial epochs by themselves.

Such periods of mountain building could conceivably be accompanied by enough volcanic activity to fill the air with dust that could in turn cut down the sunshine reaching the surface. Dr. Harry Wexler, '39, director of meteorological research for the United States Weather Bureau, has estimated that changes of about 20 degrees Fahrenheit in average surface temperature are involved between glacial and interglacial periods. He notes that blankets of volcanic dust, or even changes in atmospheric carbon dioxide, of reasonable amounts, could contribute significantly to surface temperature changes in this range. Again there is not enough data to support ice-age theories based on these factors alone. The present balance of opinion among ice-age theorists is that uplifted continents, volcanic dust clouds, and other geophysical effects may be contributing factors, but the variability of the sun is the dominant influence. . . .

Whatever the ultimate cause of climate change may be, our present climate is very sensitive to changes in average temperature. A drop of only four degrees might be enough to bring on an ice age. It would mean a climate cool enough so that summer melting might not be able to remove the winter's accumulations of ice and snow and the glaciers would grow and move southward. On the other hand, the British geophysicist Sir George Simpson has dissented from the assumption that the temperature has to drop to start the glaciers growing. Instead, he has argued that the temperature would have to rise. He pointed out over 20 years ago that the chief result of a general cooling might be a drop in the moisture content of the air and a damping

(Continued on page 42)

Books

SPINDRIFT FROM A HOUSE BY THE SEA, by John J. Rowlands, illustrated by Henry B. Kane, '24; W. W. Norton & Company, Inc. (\$3.95). Reviewed by Frederick G. Fassett, Jr., Dean of Residence, M.I.T.

"SPINDRIFT," says the author, "is the misty spray that flies from the cresting waves when the winds blow hard and the seas run high. What I have to say is Spindrift of a kind—fragments of life snatched now and then, here and there . . . I have written at random, and in no particular order, of what I have seen and heard, of sights and sounds, of the thoughts and memories, that have made my life so well worth living." What we have, then, is a collection of writings varied in length, in tone, in substance, and in purpose, but all infused with quiet, solid satisfaction for the reader of thoughtful and curious mind. This is no book which a reviewer can tag with a glib classification; on the contrary, this is hearing a congenial and generous man share in amiable conversation experiences and observations marked with the sense and poise of a rich lifetime.

Several of the pieces have appeared in magazines. One "Flight of a Moth," was not so issued, and it is decidedly not easy to say why, for in perceptiveness and understanding this is a most unusual narrative, wherein comprehension of youth and age, of major life and minor life, is given direct, unaffected expression.

The range of the book is broad, from the expectancies and upsets which every housebuilder knows to the isolation of the Indian standing alone under the Northern Lights in the Arctic night.

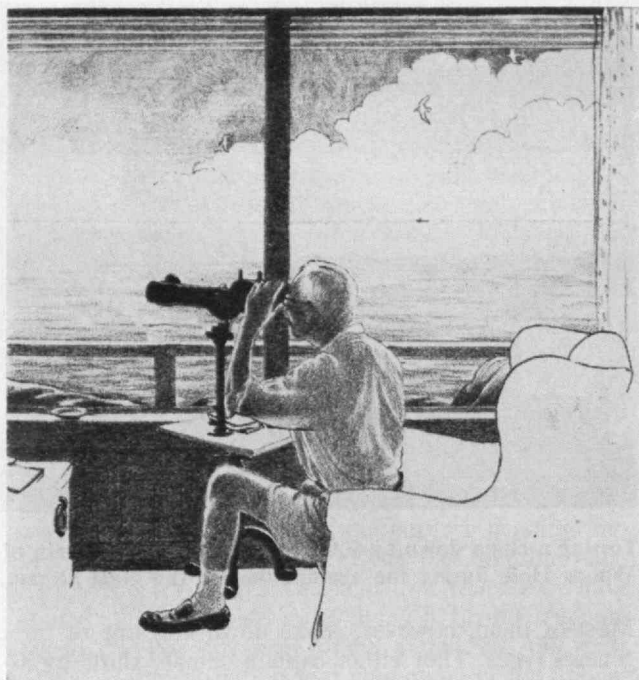
THE GEOMETRY OF GOLF, by William A. Tripp, '22; Vantage Press (\$2.50). Reviewed by Richard L. Balch, Director of Athletics, M.I.T.

RATHER than write a book on "How To Play Golf," William A. Tripp has described in a simple, direct fashion what he calculates to be the basic mistakes in

physical co-ordination of the golf swing. He admits that *The Geometry of Golf* has much to do with Byron Nelson's statement that: "In golf, it's not who you are, what you are, or what you have that counts. It's 'How badly do you want to win?'"

As a person who plays "at" the game of golf, Mr. Tripp's efforts refute many of the old wives' tales having to do with grip, stance, pivot, and so

forth. He encourages the average golfer by suggesting that one may accommodate variations in physical



A "Spindrift" illustration, drawn by Henry B. Kane, '24.

strength and stature by simple analysis of the golf swing.

This 57-page collection of notes sets forth much that has evolved from pure common-sense analysis. The suggestions having to do with the use of a hammer as being applicable to the wrist action in golf, and the description of the arc of swing, provide a working formula for one interested in decreasing the number of divots afforded the local grounds-keeper.

The author, unlike many, suggests no panacea for the weekend golfer, but does dissect enough of what happens to make more than just interesting reading.

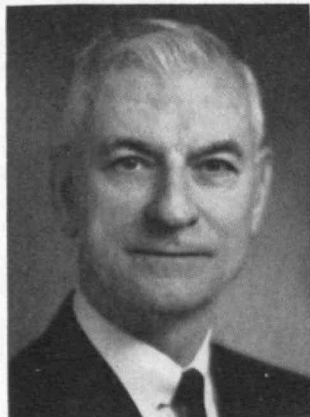
I am sure Mr. Tripp conveys to all the enjoyment he has afforded himself in the analysis of his own game and does provide a framework in which others may consistently get the ball off the tee.

GUIDE TO SAILING, by Leonard Fowle; Chilton Company (\$1.95). Reviewed by John I. Mattill, Director of Publications, M.I.T.

ANOTHER little book has joined the long shelf of beginners' manuals on sailing. This one—by Leonard Fowle, who faithfully covers sailing for the *Boston Globe* with authority and skill—will win no literary prizes. But it is a competent little summary which any landlubber like this reviewer will find useful and stimulating. And if he happens to come from M.I.T., his interest in it will be far sharper.

In his introduction Leonard Fowle expresses his debt to Walter C. Wood, '17, M.I.T.'s Sailing Master, who he says "has probably taught more people to sail than any man in the United States." Those who have learned to sail with Jack Wood know the unique values of his M.I.T. Shore Trainer in showing the fundamental maneuvers of a sailboat in every kind of wind. An outstanding feature of Leonard Fowle's book is his use of this same method to describe how to manage a sailboat under every sailing condition.

(Book news is continued on page 60.)



William A. Tripp

BUSINESS IN MOTION

To our Colleagues in American Business ...

It has often been mentioned in these messages that in order to produce the best possible product at the least possible cost, it is a good idea to take your suppliers into your confidence...tell them your problems...seek their aid.

The following incident is a striking example of the advisability of doing just that.

The Dayton Precision Manufacturing Company, maker of the commutator you see illustrated, was having difficulties with the ferrous metal it was using for the hub; for not only did the rod from which the hubs were fabricated have to be drilled but it also had to be able to withstand a flanging operation. Their Chief Engineer decided to discuss this with one of Revere's Technical Advisors.

After a thorough study of the problem Revere Brass Rod of a certain alloy was recommended and samples were furnished. The manufacturer found the machinability of the brass rod to be outstanding, being readily and speedily drilled. Also, it withstood

the flanging operation...a set of manufacturing conditions where only brass, the right kind of brass, outshines all other metals and alloys.

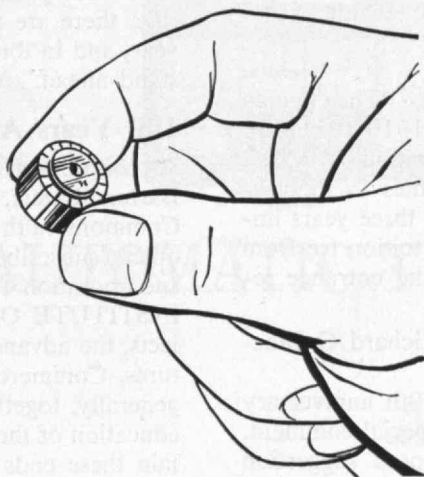
The final score showed that the low first cost of the brass rod, plus the fact that it could be machined faster and more easily than ferrous metal, resulted

in a superior product at a saving in production cost. A further advantage was the added sales appeal of the brass hub.

There you have another example of how Revere in collaboration with the manufacturer's engineering department, helped "fit the metal to the job," which resulted in a better part at the least possible cost.

Revere, a supplier, is conscious that still other suppliers can often collaborate to help customers produce a superior product for less money.

And because almost every industry you can name is able to cite similar instances, we suggest that no matter what your suppliers ship you, it may pay you to take them into your confidence.



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25 Years Ago

PRELIMINARY registration figures showed a total 1935-1936 enrollment of 2,544 (up 59 from 1934-1935), including 517 (up 37) in the Graduate School, and 568 (up 20) entering freshmen of the Class of 1939.

Further pleasant news was revealed by the second Annual Report of Horace S. Ford as Treasurer of the Institute, covering the fiscal year 1934-1935. The operating budget of \$2,695,000 had been balanced with a margin of \$238.73. "The Institute's cumulative deficit on account of operations since 1865 now stands at \$24,951.22," wrote Mr. Ford.

Among new members of the Institute Staff were Associate Professor Ernst A. Hauser in the Department of Chemical Engineering and Instructor Irwin W. Sizer in the Department of Biology and Public Health.

50 Years Ago

THE EDITOR of the Review thought, "The figures connected with registration this year [1910-1911] are unusually impressive. The total registration is 1,506, which has been exceeded but three times in the history of the Institute, and these were the three years immediately preceding the increase of the tuition fee from \$200 to \$250 and also the raising of the entrance requirements."

In the autumn of 1910, President Richard C. MacLaurin wrote of the Institute:

"It does not seem proper that the 50th anniversary of its foundation should pass without special comment. It has, therefore, seemed wise to adopt a suggestion made by the Alumni Council and celebrate this anniversary by holding a Congress of Technology on the 10th and 11th of April next.

"It is hoped that at this Congress men of eminence will be present to set forth some of the broader results of the application of science to industry which it is the main purpose of the Institute to further, and to indicate the gain in industrial efficiency that may be expected from the extension of its influence."

75 Years Ago

REGISTRATION for 1885-1886 totalled 609, an increase of 30, or five per cent, over 1884-1885. Of the 629 members of the student body, 387 (nearly two-thirds) came from Massachusetts; 78 (over a fifth) were from other New England states.

"Once again we have met at the Institute after our long vacation," observed the editor of *The Tech*. "Last May we left with feelings of pleasure at having finished a year of hard work, and the prospect of a pleasant rest during the summer; and now we return with the same feelings at the thought of meeting our classmates once again, which are mingled with regret at finding some of them absent."

Matters were going on differently, however, with respect to "foot-ball," the editor was pleased to admit. "Its prospect . . . this year," he considered to be "most encouraging. The old foot-ball association being defunct, a new one has been formed in its stead, which, so far, has shown itself to be very wide-awake and enterprising. It has been proposed to form a Northern Inter-Collegiate Foot-ball League, to include Amherst, Williams, Tufts, and Dartmouth colleges, and Technology. . . .

"Not for several years has so much interest been shown in foot-ball at the Institute, as at present a large number of men have been trying out for the team. Nearly all of last year's eleven are here this year, and it will be greatly strengthened by some new additions. The team is to go into strict training, and will probably have a trainer."

The editor's optimism proved well-founded for, during November, 1885, the "Techs" successively defeated Williams by a score of 14-0, Tufts by 110-0, Amherst 32-0, and Amherst again in a return engagement by 80-0. This put them in a tie with Williams for the league championship, but on November 25 Williams defeated the "Techs" 18-10.

All this prompted the editor to comment: "At any rate, there are no goose-eggs in our *league* record this year, and in total number of points won the Techs still stand ahead." *

100 Years Ago

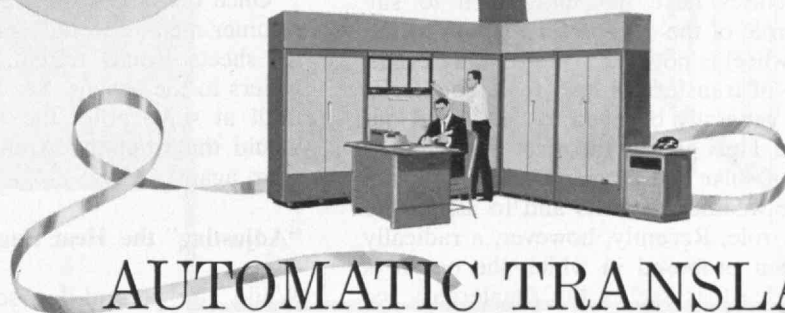
AN APPLICATION, in the handwriting of William Barton Rogers, was made to the General Court of the Commonwealth of Massachusetts, in which he and 18 other "subscribers [did] respectfully pray for an Act of Incorporation for an Institution to be entitled MASS. INSTITUTE OF TECHNOLOGY, having for its objects, the advancement of the Mechanic Arts, Manufactures, Commerce, Agriculture and the applied sciences generally, together with the promotion of the practical education of the industrial classes, and proposing to attain these ends by the threefold agency of discussions and publications relating to industrial art and science; by a Museum of Technology, embracing the materials, implements and products of the practical arts and sciences; and by a School of Industrial Science, for instruction; by lectures, laboratories and other teachings, in those several departments. . . ."

The subscribers did also "respectfully pray that a section of land on the Back Bay may be reserved and granted, on such terms and conditions as may seem needful for the use of said Institute, such section being situated adjoining the sections asked for by the Boston Soc. of Nat. History and the Mass. Horticultural Society."

On November 20, 1860, the Secretary of State approved this application for publication in the *Boston Daily Advertiser* after which it was forwarded for action by the General Court when that body assembled the following January.

* As noted by Dean S. C. Prescott, '94, in his *When M.I.T. was Boston Tech*, "Football had not then reached the dominant position it later assumed in college life, and games were played for enjoyment, without expensive equipment or coaches. The game persisted lamely at the Institute until 1906, when student government decided that M.I.T. men had neither the time for training nor the means to keep up intercollegiate competition."

автоматический перевод вычислительные машины способствуют исследова- нию языков



AUTOMATIC TRANSLATION INDEXING ABSTRACTING

To formulate rules for automatic language translation is a subtle and complex task. Yet, significant progress is being made. During the past several years large amounts of Russian text have been translated and analyzed at Ramo-Wooldridge's Intellectronics Laboratories using several types of existing general purpose electronic computers.

Many hundreds of syntactic and semantic rules are used to remove ambiguities otherwise present in word-for-word translation. The considerable improvements that have been effected during the progress of this work indicate that it may be possible within the next year or so to produce, for the first time, machine translation of sufficient accuracy and at sufficiently low cost to justify practical application. Electronic computers are also invaluable for other language research activities at Ramo-Wooldridge.

Techniques for automatic indexing, automatic abstracting, and other aspects of communicating scientific information are also being investigated. Research and development at the Intellectronics Laboratories will eventually lead to electronic machines capable of carrying on self-directed programs of research and analysis and "learning" by their own experiences.

The accelerating pace at which these "communication of knowledge" problems are growing in importance has created challenging career opportunities in new fields of scientific endeavor.

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Climate Control and the Oceans

(Continued from page 37)

down of the atmospheric circulation. This could cut down snow and rainfall so much that ice would be unable to accumulate in spite of the cooler summers. Moreover, the Arctic seas would freeze, cutting down even further the amount of moisture and snowfall in northern latitudes. A general warming would have an opposite effect. Increased evaporation from the oceans would load the air with moisture. Winter snowfalls would be heavy—too heavy for summer melting to keep up with—and glaciers would start to grow. There would be more cloudiness, helping to increase the amount of incoming sunshine reflected back into space. If the warm-up continued strongly, summer melting would, of course, predominate and the ice sheets would again melt. But a slight warming, according to this theory, could conceivably start an ice age. No expert today understands the climate mechanism well enough to confirm or refute this theory. Thus it has remained a possibility that has to be considered in evaluating world climate trends. It is one reason why experts don't know what the carbon dioxide experiment will lead to.

Most glacial theories have not had much to say about the climatic role of the oceans. The action of the thermodynamic flywheel is not understood in any event, while the main job of transferring heat from equatorial to polar regions is generally believed to be carried out by the atmosphere. Thus glacial theorists have tended to study the effect of solar and other possible influences on the atmospheric weather patterns and to assign the oceans a secondary role. Recently, however, a radically new theory has been proposed in which the ocean is the key factor, at least as far as the Quaternary ice ages are concerned.

Atlantic Thermostat

It would seem obvious that during an ice age the polar waters of the Arctic Ocean would be frozen as solidly as everything around them. However, by turning their backs on the obvious and working out what might have happened had this ocean been open during the past four ice ages, two geophysicists have come up with a remarkable theory of climatic change in which the sea acts as a kind of thermostat. They also conclude that the earth is heading inexorably into still another ice age in spite of its present warming trend. The geophysicists are Dr. Maurice Ewing and Dr. William L. Donn, associate professor of geology and meteorology at Brooklyn College. Here is the way they think the ocean thermostat may work.

The Arctic Ocean communicates with the rest of the seas over a narrow sill between Greenland and Norway, most of which is less than 300 feet deep. Its connection through the Bering Strait with the Pacific is too restricted to count. If the waters of the North Atlantic and Arctic oceans could freely interchange over this sill, the latter wouldn't freeze over. This, according to the theory, was the case before and during the past four ice ages of the present epoch. It would have meant a radically different weather pattern in the north than is found there today. The Arctic is cold enough now to form glaciers. But there is so little snowfall that summer

melting can more than keep up with the winter accumulation. With an ice-free Arctic Ocean warmer than the surrounding land and moistening the air, the situation would be different. Heavy snowfall would come down and build up into glaciers, changing into steel-hard ice under its own weight. These ice sheets would begin to flow south, bringing severe weather with them, until centuries later they engulfed regions as far south as New York and Paris.

Meanwhile the growing ice sheets would withdraw water from the oceans, lowering sea levels around the world. At some point the water level would drop so low that the interchange across the North Atlantic sill would effectively cease. The Arctic Ocean then would freeze, cutting off the precipitation supply for the glaciers and signaling the end of the ice age.

Donn and Ewing say that something of this sort seems to have happened at the end of the last ice age at least. They have found indications in bottom cores taken in the Atlantic and Caribbean that the waters there may have suddenly warmed significantly about 11,000 years ago. This sudden widespread warming might be easily explained if the Arctic froze over and stopped exchanging its cold waters with the Atlantic.

Once the Arctic did freeze and cut off the snowfall, summer melting would again have the upper hand. The ice sheets would retreat, giving up their imprisoned waters to the oceans. Sea level now would start to rise, until at some point the warm waters of the Atlantic would thaw out the Arctic and start the ice cycle all over again. . . .

"Adjusting" the Heat Engine

While any present-day schemes for changing climate are either pipe dreams or precocious visions, experts foresee the day when serious proposals along this line will be advanced. Writing in *Science*, Dr. Wexler notes that "when serious proposals for large-scale weather modification are advanced, as they inevitably will be, the full resources of general-circulation knowledge and computational meteorology must be brought to bear in predicting results." In this way, he adds, men can perhaps avoid "the unhappy situation of the cure being worse than the ailment." Scientists will have had to do a good deal of advance research if they are to evaluate such proposals. Some of the weather-modification schemes currently discussed, while impractical today, at least indicate areas in which some of this research will have to be done.

Wexler himself has suggested a way to speed up the melting of the Arctic sea ice. He thinks a few well-placed hydrogen bombs might do the trick. It would take 10 bombs of 10 megatons each (the equivalent of the explosive energy of 10 million tons of TNT). Setting these off under water might throw up enough steam to blanket the Arctic Ocean in an ice fog that would substantially cut down the heat escaping from that region by radiation. This, Wexler says, would speed up the melting tremendously.

Thawing out the Arctic is a favorite project with would-be climate tinkers. It would pay off immediately in ice-free northern harbors and by shortening the sea journey between Atlantic and Pacific ports by thou-

(Concluded on page 44)

"Locked In"— or Out?



The investor who says, "I am locked in—my profits are so large I can't afford to sell and pay the taxes," will do well to take a fresh look. He may be following his emotions rather than logic.

If the stocks that he owns are not the best for his purpose, he is locking himself *out* of the greater benefits he could obtain by replacing his present holdings.

The question of profit-taking is part of a larger picture: it involves investment objectives, family, and estate considerations. A discussion with the Trust Company could "unlock" the situation and lead to profitable action.

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Climate Control and the Oceans

(Concluded from page 42)

sands of miles. It could raise the average temperatures at latitudes of London, and New York, or Moscow by as much as 10 degrees Fahrenheit. Besides Wexler's bombs, other schemes include the spreading of heat-absorbing soot or lampblack over the ice and even damming the Bering Strait and pumping in warm water from the Pacific. All of these schemes, even if they were practical to carry out, have a fatal weakness. As Wexler himself points out, unpredictable side effects could outweigh the supposed benefits. The Ewing-Donn theory suggests that unfreezing the Arctic would start another ice age, while Simpson's theory predicts a similar effect.

A different sort of climate-modification scheme has been suggested by Henry Stommel (Professor of Oceanography at M.I.T.) to avoid the ice age that may be creeping up on us—suggested, that is, with tongue in cheek, for Stommel thinks present knowledge too scant for such speculation. He would do it by damming the Strait of Gibraltar. This would take only about 10 times as much fill as the Fort Peck Dam in Montana and would effectively stop the flood of salty Mediterranean water into the North Atlantic. Over several decades the salinity of the Atlantic would then drop, lowering the general densities of its water to the point where cold Arctic water wouldn't sink at all. If this water couldn't sink below the northward-flowing waters of the Gulf Stream, the latter, which now flow up to the

Arctic, would be diverted southward and held in a practically closed system within the North Atlantic. Then the interchange of warm water between Atlantic and Arctic oceans would be checked, and any ice age tending to develop along the lines of the Ewing-Donn theory would be blocked.

Commenting on this in the *Scientific American*, Stommel has neatly summed up the status of such schemes today and the great need for more basic research. "Common sense rebels against such an argument," he wrote. "It is hard to imagine so fantastic an effect from so small an intervention by man. And indeed the argument is loaded with unproved assumptions and tenuous speculations. We could construct an equally plausible argument that the same stratagem might cool rather than warm the earth. I cite this entertaining fantasy only to show that we need a great deal more information before we can begin to talk knowledgeably about altering the climate. All such speculations merely illustrate how little actual knowledge we have and how valuable it would be to develop a quantitative understanding of the ocean circulation."

M.I.T. on TV

Two TV SHOWS to be broadcast this fall by CBS were prepared as part of the observance of M.I.T.'s centennial. One, "The Thinking Machine," was to be telecast by many stations at 10 P. M., E.D.S.T., October 26; the other, "Big City, 1980," will be aired first at 9:30 P. M., E.S.T., November 21.



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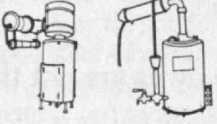
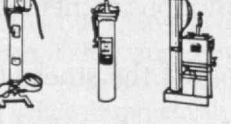


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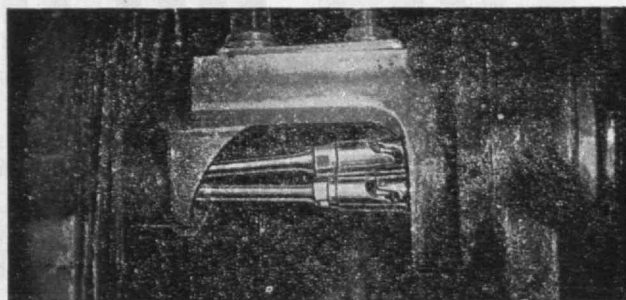
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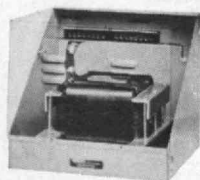
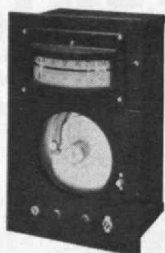
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Feedback

(Continued from page 3)

fort) to let (or, if you will, to lead) students to "discover" and develop mathematics by their own efforts (more or less)—or, is it wiser to tell them what to do and how to do it?

If we are to have a really enjoyable argument we shall probably need one or two ground rules. Mathematics and Pedagogy (otherwise known as Education) have lived so long on opposite sides of the cyclotron that they have gradually and conscientiously acknowledged a mutual obligation to be bad neighbors. It may be partly for this reason that discussions about "teaching" or "learning" are normally refereed according to one or the other of two extremes.

One extreme holds that there can be but one Scientific Method, and that this is Experimentation (meaning that, if you take a few children, ask them to write answers to enough foolish questions, and employ enough arcane statistical methodology, you are sure to succeed in measuring a few possibly irrelevant variables—and, at the very least, you cannot easily be refuted).

The other extreme holds that any interesting question can only be settled by rhetoric. (Only a fool or an engineer steps into a lab—unless, perhaps, it is air-conditioned.)

The two questions under discussion relate to facts about human behavior. I propose that the matter can best be settled by some compromise system of scoring—I, myself, would not feel comfortable with an intelligent discussion largely unsupported by experiment (or, at least, by experience), nor with a program of "testing" and "control groups" and "evaluation" that leaned heavily on tables of random numbers and such-like, while sedulously avoiding even the slightest suspicion of any dependence upon human judgment, human insight, or human intelligence.

I have, in fact, a suggestion. My colleagues and I have amassed a large library of the tape recordings of actual classroom lessons, such as:

Some fifth grade children are asked whether there might be any open sentences that will be true for every correctly made substitution. They decide that these may qualify:

$$\square \times 0 = 0$$

$$\square \times 1 = \square$$

$$3 \times \square = \square \times 3$$

$$4 \times \square = \square \times 4$$

$$1066 \times \square = \square \times 1066$$

$$\square \times (\square + 1) = (\square \times \square) + \square$$

$$(\square + 3) \times (\square + 3) = (\square \times \square) + (6 \times \square) + 9$$

$$(\square + \triangle) \times (\square + \triangle) = (\square \times \square) + [(\triangle + \triangle) \times \square] + (\triangle \times \triangle),$$

(Continued on page 48)

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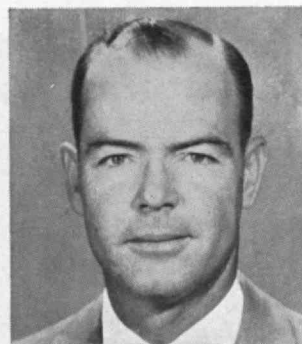
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Edward Billstein, Jr., '40, Atlanta
R. Lester Dodson, Jr., '44, East Orange

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Feedback

(Continued from page 46)

plus many more. An open sentence that becomes true for every correctly made substitution is called an *identity*. By discussion among themselves, they decide there are two categories of open sentences: those which definitely are *not* identities (as proved by the existence of a "false" substitution), and those which look as though it may be hopeless to disprove them. These latter form a long list of "tentative identities." The children are asked to shorten this list as much as possible, "without losing anything." In response, they devise the technique of making *derivations*, and arrive (after two or three 45-minute lessons) at something reasonably close to the field axioms. The list looks approximately like this:

$$\begin{aligned} \square + \triangle &= \triangle + \square \\ \square \times \triangle &= \triangle \times \square \\ \square \times (\triangle + \nabla) &= (\square \times \triangle) + (\square \times \nabla) \\ \square + (\triangle + \nabla) &= (\square + \triangle) + \nabla \\ \square \times (\triangle \times \nabla) &= (\square \times \triangle) \times \nabla \\ \square \times 1 &= \square \\ \square + 0 &= \square \\ \square \times 0 &= 0 \\ 1 + 1 &= 2 \\ 2 + 1 &= 3 \\ 3 + 1 &= 4 \\ &\vdots \end{aligned}$$

At this point in the lesson, one of the ten-year-old children in the class suggests adding this identity

$$\square + \square = 2 \times \square$$

to the list.

Two girls tell him that this is probably redundant, in light of $1 + 1 = 2$.

They realize, however, that this is not a proof. They proceed to make a derivation:

Theorem

$$\square + \square = 2 \times \square$$

Proof

$$\begin{aligned} 2 \times \square &= 2 \times \square \\ (1 + 1) \times \square &= 2 \times \square \\ \square \times (1 + 1) &= 2 \times \square \\ (\square \times 1) + (\square \times 1) &= 2 \times \square \\ \square + \square &= 2 \times \square \end{aligned}$$

Q.E.D.

A boy remarks at this point that he can prove it another way. He inserts the "ones" where necessary in the following proof, without any help or prompting, although he presumably has never seen anything like this before:

Theorem

$$\square + \square = 2 \times \square$$

(Concluded on page 50)

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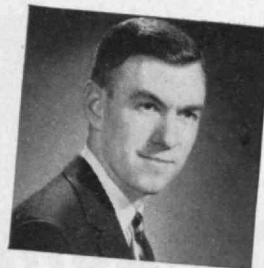
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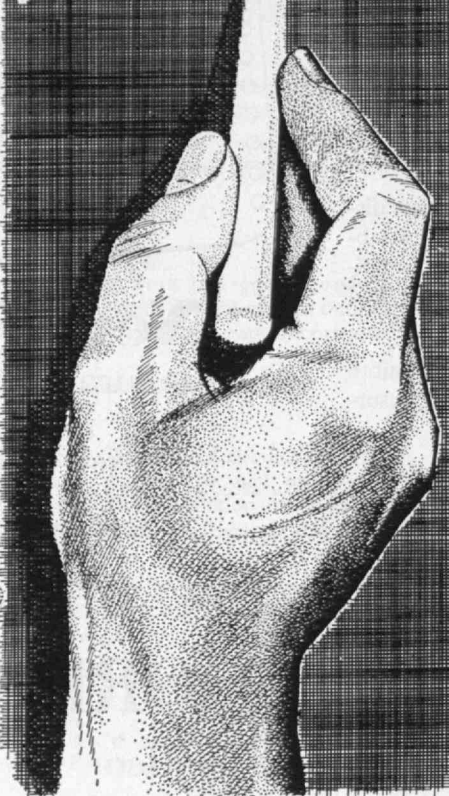
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$(y) = W \log$



Feedback

(Concluded from page 48)

Proof

$$\begin{aligned}\square + \square &= \square + \square \\ \square + \square &= (\square \times 1) + (\square \times 1) \\ \square + \square &= \square \times (1 + 1) \\ \square + \square &= \square \times 2 \\ \square + \square &= 2 \times \square\end{aligned}$$

Q.E.D.

I find this kind of thing very exciting. These children are really discovering things at what is, for them, the absolute frontier of knowledge.

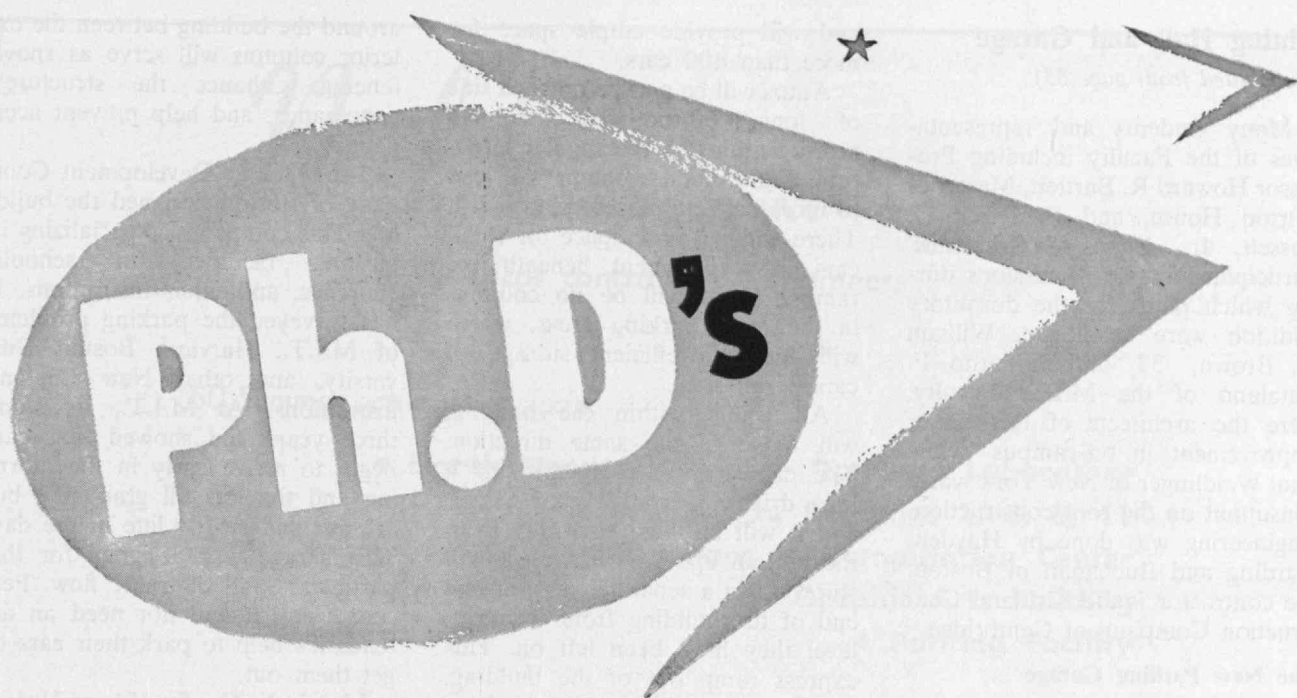
I do not know whether this sort of instruction—the teacher, as always, mainly stands by and watches—is good for children. I believe it is, and, in order to continue working with these same children, I plan to fly to Weston, Conn., every Thursday and continue to teach them for as many years into the future as is possible and seems desirable. I may thereby gain some evidence one way or the other, although I realize that I shall never satisfy the “control-group-statistics-evaluation” faction, nor the “trying-it-out-is-for-sissies, a he-man sits and argues” faction. I may not even satisfy myself, but then again I may. In the meantime I shall be tape-recording every lesson.

Perhaps the idea behind it all is this: When you ask college freshmen about a problem, they frequently say “I don't believe we've had that . . .” If you give a problem to fifth-graders, they think about it, and often very cleverly. The difference is very pronounced, and is entirely in favor of the fifth-graders. It is my hope that by giving the fullest possible scope to the natural inventiveness, creativity, and originality of these children—instead of telling them things for one year after another—we can develop a new breed of college freshmen. At present I do not know whether this is possible. Fifteen years from now I may.

Concerning the tape recordings: I feel about these tapes as parents do about recent photographs of their children. They are my best evidence that young children *can* discover significant mathematics. If you'd like to borrow one, just write. I may even pay the postage both ways. I believe I can show you that the “discovery method” does work.

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P.S. If I may do so without retreating from a properly belligerent tone, I should like to thank Malvin Mayer, '33, for his excellent remarks (May 1960) in defense of the poor lil' \square . I, too, hope that “. . . the ‘new’ notation will give a better comprehension of mathematical principles . . . at an early age.” You know, I think it really may!



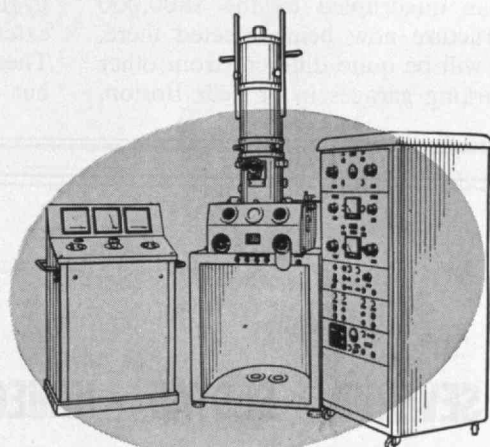
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Dining Hall and Garage

(Concluded from page 33)

Many students and representatives of the Faculty including Professor Howard R. Bartlett, Master of Burton House, and Frederick G. Fassett, Jr., Dean of Residence, participated in the discussions during which plans for the dormitory addition were developed. William H. Brown, '33, and Eduardo F. Catalano of the M.I.T. Faculty, were the architects of this major improvement in on-campus living. Paul Weidlinger of New York was a consultant on the roof construction. Engineering was done by Hayden, Harding and Buchanan of Boston; the contractor is the Kirkland Construction Company of Cambridge.

The New Parking Garage

The capacity of the parking lot on Vassar Street which has been used by Building 20's occupants and others for many years will be more than quadrupled by the \$800,000 structure now being erected there. It will be quite different from other parking garages in or near Boston,

and will provide ample space for more than 400 cars.

Autos will be parked on each side of long, 60-foot-wide, inclined ramps within the rectangular structure. Eight of these ramps will lead to more parking places on the roof. There will be more space for small cars in a basement beneath the ramps. There will be no columns in the main parking areas, which will facilitate efficient storage of cars of all sizes.

All traffic within the building will move in the same direction. The cars will enter it through a long driveway from Vassar Street, and it will be filled each day from the bottom up. Cars leaving it will spiral down a separate ramp at one end of the building from whatever level they have been left on. This express ramp out of the building, and the absence of columns from the parking spaces, will be the building's most distinctive features.

The main structure will be 228 by 121 feet, and the exit ramp will extend out 50 feet from one end. There will be no heating system, but aluminum-mesh screening

around the building between the exterior columns will serve as snow-fencing, enhance the structure's appearance, and help prevent accidents.

The Parking Development Company of Boston designed the building. This company is specializing in parking facilities for schools, churches, and other institutions. It has surveyed the parking problems of M.I.T., Harvard, Boston University, and other New England institutions. At M.I.T., its study three years ago showed that cars begin to arrive early in the morning and the lots fill gradually, but are emptied swiftly late in the day. This garage was designed for this particular kind of traffic flow. Persons using it will not need an attendant's help to park their cars or get them out.

Marvin E. Goody, '51, of Hamilton and Goody, was associated with the Parking Development Company's architectural staff, and engineering service was provided by Maurice A. Reidy, '18, of Boston. The John F. Griffin Company of Cambridge is the contractor.

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THOMAS E. WEIL '49

2d Century Fund Meeting

(Concluded from page 25)

more with than for the Faculty at M.I.T."

After being briefed on the Institute's needs in the Little Theater of Kresge Auditorium, the Second Century Fund's leaders attended a reception at the President's House, and heard Mr. Sloan and Dr. Killian speak at the dinner in Walker Memorial which concluded the first day of the conference.

Details of the organization set up to solicit funds were explained the next morning by Mr. Wilson, Walter J. Beadle, '17, chairman for Individual Leadership Gifts, and Philip H. Peters, '37, chairman of the Area Organization. Questions about taxes were answered by Joseph J. Snyder, '44, Vice-president and Treasurer of the Institute; and "a rehearsal for solicitation" was enacted with suitable stage props by Marshall B. Dalton, '15, chairman of the Corporation Committee on Development, and Gregory Smith, '30, vice-chairman for Area Organization. Tours of the Institute concluded the conference.

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2BS	.125	3/16	1-1/32	16	5.90
3BS	.156	9/32	1-3/8	64	5.75
4BS	.1875	9/32	1-3/8	64	5.75
5BS	.2188	3/8	1-3/4	256	5.75
6BS	.250	3/8	1-3/4	256	5.75

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Part No.	Bore	Body	Length	Torque In. Oz.	Price 1-4 pcs.
DB1BS	.0938	3/16	1-1/2	16	11.80
DB2BS	.125	3/16	1-1/2	16	11.80
DB4BS	.1875	9/32	2	64	11.50
DB6BS	.250	3/8	2-1/2	256	11.50

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Individuals Noteworthy

(Continued from page 10)

ard & Burns, Inc. . . . Roger M. Amadon, '48, as Vice-president, W. F. Schrafft and Sons Corporation, Boston;

Charles N. Winnick, '48, and Joseph L. Russell, '55, as Assistant Director for Exploratory Research, and as Director of Research, respectively, of Scientific Design Company, Inc. . . . David K. Hardin, '49, as President of the Chicago chapter, American Marketing Association . . . Richard H. Clough, '51, as Dean, College of Engineering, University of New Mexico.

Honors to Alumni

MEDALISTS and recent recipients of other distinctions include:

Thomas C. Desmond, '09, the 1959 Distinguished Service Award, by New York Botanical Garden . . . Robert S. Mulliken, '17, the Theodore William Richards Medal “for conspicuous achievement in chemistry,” by the Northeastern Section of the American Chemical Society . . . Robert R. Thurston, '21, and Louis Tanner, '24, the Award of Merit for 1960, by the American Society for Testing Materials;

Robert C. Sprague, '23, the grade of Fellow, American Academy of Arts and Sciences . . . Brigadier General Robert J. Fleming, Jr., '31, designation as officer of the French Legion of Honor, by the Ministry of Foreign Affairs, for his work as unofficial ambassador of good will of the American people to the French; . . . Ivan A. Getting, '33, the Distinguished Service Medal, by the U.S. Air Force;

Colonel Clarence L. Battle, Jr., '46, the Legion of Merit, from the Secretary of the U.S. Air Force, for “successful recovery of a payload capsule from the orbiting satellite” . . . Ezra S. Krendel, '47, the Louis E. Levy Medal, by the Franklin Institute . . . Robert O. Bigelow, '49, named as “Massachusetts’ Young Engineer of the Year,” by Massachusetts Society of Professional Engineers.

W. N. Seaver: 1877-1960

WILLIAM NATHANAEL SEAV-ER, Librarian Emeritus, died last July 17. Mr. Seaver was librarian for the Institute from 1925 until his

(Concluded on page 58)



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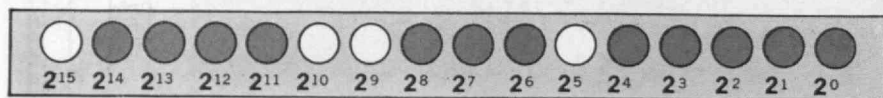
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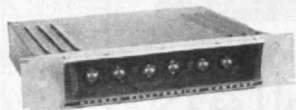
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Individuals Noteworthy

(Concluded from page 56)

retirement in 1947 and was largely responsible for the library's steady growth in size and prestige.

After graduating from Harvard in 1900, Mr. Seaver served in the Economics and Sociology Department and Municipal Reference Branch of the New York Public Library. During World War I he was a delegate for the Library War Service of the American Library Association at Edgewood Arsenal, later transferring to the Dispatch Office at Newport News, Va. Prior to his appointment as assistant librarian at M.I.T. in 1924, he also had been librarian of the Woburn (Mass.) Public Library for four years.

After his retirement Mr. Seaver worked on a three-year project to collect and plan a library for the new Instituto Tecnico da Aeronautica being built by the Brazilian government near Sao Paulo. He was a member of the American Library Association, the Special Libraries Association, the New England Association of College Libraries, Delta Upsilon Fraternity, the Melrose Unitarian Church, and the Laymen's League.

Mr. Seaver is survived by his wife, the former Inez Mildred Waite, and three daughters: Mrs. Norman R. Anderson of Towson, Md., Mrs. Donald G. Harrington of Endicott, N. Y., and Mrs. Richard Kimball of Lexington, Mass.

Lowell Institute

AS THE Lowell Institute School at M.I.T. began its 58th year this fall, F. Leroy Foster, '25, who became its acting director last year, was named director. Dr. Foster is also director of the M.I.T. Division of Sponsored Research, and was formerly a member of the Faculty of the Department of Mining and Metallurgy.

Baseball Coach

JOHN G. BARRY has become varsity baseball coach at M.I.T., succeeding Robert M. Whitelaw. Mr. Barry joined the Institute's coaching staff a year ago and is an instructor in the physical education program. He was graduated from the University of Michigan in 1942 with a degree in physical education, and has an impressive athletic record.



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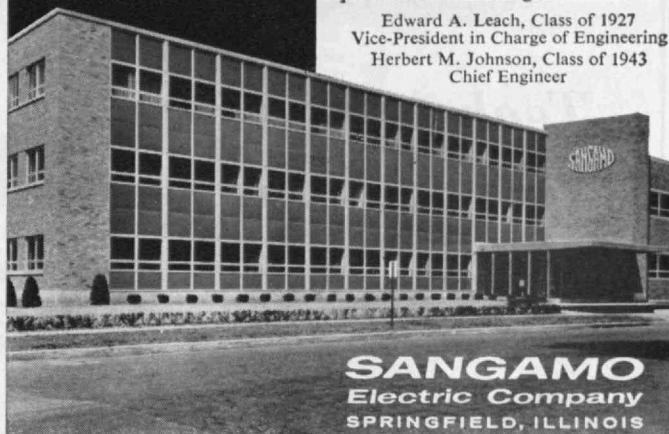
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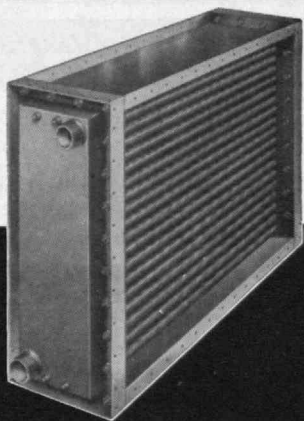
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- *Dynamic Programming and Markov Processes*, **Ronald A. Howard**, Assistant Professor of Electrical Engineering, MIT.
- *The Image of the City*, **Kevin Lynch**, Associate Professor of City Planning, MIT.
- *Electronic Processes in Solids*, **Pierre R. Aigrain**, former Visiting Webster Professor of Electrical Engineering, MIT.
- *Methods of Regional Analysis*, **Walter Isard**, Chairman of the Department of Regional Science University of Pennsylvania. Previously of MIT.

Technology Press



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Books

(Continued from page 38)

HORNS, STRINGS & HARMONY, by **Arthur K. Benade**, prepared under the direction of the **Physical Science Study Committee; Doubleday Anchor, (95 cents)**. Reviewed by **Robert K. Mueller, '32**, Associate Professor of Aeronautics and Astronautics.

IF IT is correct to presume that the volumes of this series are intended as inspirational reading, to plant the seeds of profound thought in fertile and perhaps unsuspecting young minds, then the subject matter of this book offers a rare opportunity for great conquest. The existence in parallel of interest in science and music, the latter often deeply felt, has been observed often enough in productive minds in the past to be no oddity. One can imagine that the great Helmholtz, for all his Prussian austerity, could hardly have devoted the energy he did to virtually the whole spectrum of sound, subjective and objective, without a deep well of feeling for music as an art form.

The great opportunity here is that experience with wave fields in an ordered sense, involving an awareness of harmonic structure, has certainly been associated with sound far longer in human history than with any other phenomena. Until comparatively recently, light has been sensed rather as geometrical, with the sensation of color strong but isolated from mathematical thought. Now, of course, the two are becoming identified in microwave theory, and it is precisely here that the long history of musical instruments with empirically evolved forms, still not completely understood, seems like a natural precedent to the guides, cavities, and radiators which are becoming the distinctive features of communications systems.

The author, possibly as a matter of strategy with relation to his intended readers (who are unlikely to read reviews), has made nothing of this link. His approach is honest, open, and refreshing—clearly inspired by his own musical sensitivity. The early chapters in the book dealing with pendulums, simple oscillators, actual strings as limiting cases for strings of beads, etc., are well done; if passed over lightly here, it is only for the purpose of getting on to chapters on horns, theoretical and real. Here some really profound principles are deftly introduced under the guise of explanations of empirical features of practical musical instruments.

Since there are a number of examples of this, some picking at random is necessary. The discussion of "privileged" frequencies in brass instruments is an excellent example of subharmonic resonance where the lips achieve a co-operation with the air column at some fraction of one of the modes of the latter. Another example has to do with the open side holes in woodwinds, which form a musically more effective termination of the air column if they occur in groups of three or more. The purpose here is to achieve a similar impedance match, i. e., ratio of radiation to reflection, for the different harmonic components of a complex wave which tend to see a simple cutoff in a different way. The holes seem to act as an extended strainer which modifies the diffraction considerably.

(Concluded on page 62)

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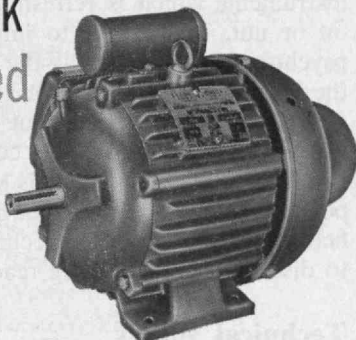
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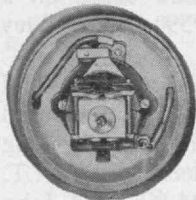
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Books

(Concluded from page 60)

There are a few pages of discussion of some little-known work of Bessel on useful bore shapes suggested by some work of his in astronomy. This will certainly go over the heads of secondary school students, if not of others, and apparently refers to propagation of complex wave shapes through a changing environment without change in form. This is an extremely important subject in long communications lines and was possibly inserted as a sleeper. In general, the "taper" of such lines where it exists in the vicinity of radiators is never expected to accommodate the frequency range of some rich musical tones and the problem, therefore, is less acute.

The book closes with a chapter on home-made wind instruments which is refreshing to read whether acted on or not. This is not to imply that it is offered for psychological effect only—the designs are practical and the sketches good, but not too good—but the result will certainly be to weed out the unfit, since considerable labor is involved. The conclusion of a prejudiced reviewer is that the book is well done but, more important, that the relevance of musical acoustics to other fields, notably microwave technology, deserves a chance to disclose itself to young readers of imagination.

Technical Books

RECENT publications likely to be of especial interest to M.I.T. Alumni include:

Direct Conversion of Heat to Electricity, edited by Joseph Kaye, '34, Professor of Mechanical Engineering, and John A. Welsh, '55, Assistant Professor of Mechanical Engineering, at M.I.T., and based on a special summer program given in 1959 (John Wiley & Sons, Inc., \$8.75).

Electronic Processes in Solids, prepared by Roland J. Coelho, '59, and Gianni Ascarelli, '59, and based on lectures given by Pierre R. Aigrain while Visiting Webster Professor of Electrical Engineering at M.I.T. in 1957 (The Technology Press of M.I.T. and John Wiley & Sons, Inc., \$4).

Information and Decision Processes, edited by Robert E. Machol, and containing contributions to a 1959 symposium by Claude E. Shannon, '40, Donner Professor of Science at M.I.T., and others (McGraw-Hill Book Company, Inc., \$5.95).

The Internal-Combustion Engine in Theory and Practice (Vol. I: Thermodynamics, Fluid Flow, Performance), by C. Fayette Taylor, '29, Professor of Automotive Engineering (John Wiley & Sons, Inc., \$16).

Properties of Elemental and Compound Semiconductors, edited by Harry C. Gatos, '50, of Lincoln Laboratory, M.I.T., and containing contributions by Lincoln Ekstrom, '57; Carol R. Kolm, '53, and Charles W. Mueller, '36 (Interscience Publishers, Inc., \$8.50).

Photochemistry in the Liquid and Solid State, arranged and edited by Lawrence J. Heidt, Associate Professor of Physical Chemistry at M.I.T., and other members of a subcommittee of the National Academy of Sciences-National Research Council on the Photochemical Storage of Energy, and based on a 1957 symposium (John Wiley & Sons, Inc., \$6).

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Club Notes

New York Club Plans To Double Membership

The M.I.T. Club of New York has opened its autumn season of 1960 with an ambitious multi-facet program, building on the efforts of past years and looking to the objectives outlined by Ed Goodridge '33, President. The focus this year is on continuing to strengthen associations with the Institute and to double membership to 3,000 by offering more opportunities to out-of-town as well as in-town members.

Plans are in motion to establish a monthly management seminar program, and for group travel and group insurance. The management programs will not conflict with the technical seminars which were administrated by Guido M. Garbarino '33, last year, and will be continued this year. Instead, they will be sponsored in part by companies which send personnel to the meetings. The purpose of the seminars is primarily to acquaint engineers out of school ten years or less with management problems they may be approaching. Group travel would involve a chartered plane to Europe and back. Anyone interested should contact Joe McGinnis '40. Group insurance is being carefully considered by the officers and directors, with the help of a three-man advisory board.

Westchester and Long Island are planning about three big events this year. Active on the scene early this year are Bob Morgan '55, Hugo Wickstrom '50, Howie Bollinger '43, Dave Buchanan '31, Thornton Smith '45, John Hennessy, Jr. '51, and Gene Smoley '19. Howe Bollinger, as membership chairman, is carrying a large share of the drive to show non-member Alumni what they are missing. The entire membership is being enlisted by the slogan "every member add a member."

In the next issue of The Review, you can expect to learn about the autumn activities and more details of future events.—James M. Margolis '52, Secretary, 5 Fenton Street, Rye, N. Y.

Pennsylvania Alumni Dine and Dance

The M.I.T. Club of Central Pennsylvania had its spring social at the West Shore Country Club in Camp Hill on May 7. Dinner was followed by dancing. Among those attending were Mr. and Mrs. Andrew R. Brugnani '26, Mr. and Mrs. L. O. Buckner '21, Mr. and Mrs. John P. Connelly '28, Mr. and Mrs. W. W. Goodnow '46, Mr. and Mrs. Marshall M. Holcombe '36, Mr. and Mrs. John A. Morefield '56, Mr. and Mrs. Robert K. Peterson '48, and Mr. and Mrs. Robert E. Smith '41.—Robert K. Peterson '48, Secretary, 566 Brentwater Road, Camp Hill, Pa.

California Club Meets Local M.I.T. Undergraduates

A dessert and coffee meeting for Southern California's M.I.T. undergraduates was held on August 10 at the University Club in downtown Los Angeles. Acting as hosts were members of the M.I.T. Club of Southern California.

The group was large and enthusiastic. After getting acquainted informally and having cake, ice cream and coffee, everyone introduced himself and a very interesting question period was held. Incoming freshmen (Class of '64) asked questions about Tech life and they were answered by the other undergraduates (Classes of '61, '62, and '63). Major concerns seemed to be about conduct of classes and expenses of living at M.I.T.

Present at the affair were: Karl Andrew Achterkirchen '64, Wesley Akutagawa '64, Michael Atlas '64, Alfred Bruce Boileau '64, Mike Burton '64, Thomas Herbert '64, William C. Hoffman '64, Kenneth Charles Jacobs '64, Verne L. Jacobs '64, Tiina Repnau '64, Mel Reznick '64, Bernard Shiffman '64, Kim C. M. Sloat '64, Francis Douglas Tuggle '64, Neil S. Golden '63, Gary Lee Fultz '61, Gary Goodman '61, Miss Deanne Gross '63, James Hornell '62, Harvey L. Lynch '61, Richard Morton '63, Michael J. Schaffer '63, Harold Solomon '63, Hiram Beebe '10, Albert Livingston '49, Dick DeWolfe '36, Bob Hiller '31, George Cunningham '27, Bud Golsan '34, Rubert Kurkjian '62, Lee Veneklasen '64, Walter Simmons '62, Art Connelly '63, Lawrence Valby '63, Carl Pontius '63, Steve Rayfield, Stephen Levy '63.

M.I.T. Alumni from the southern California area met last May 24 at the Institute of Aeronautical Sciences in Los Angeles, and heard Jan Moller, from the Space Technology Laboratories, speak.

An interesting innovation at this meeting was the awarding of three door prizes. One went to a guest whose alma mater was Harvard. The prize was an M.I.T. tie.

The following Alumni were in attendance: James B. Kendrick '34, David M. Hughes '15, Harold Raiklen '47, Page E. Golsan, Jr. '34, Mr. and Mrs. Edward Zoolalian '56, Graham H. Bell '42, Arthur Schwartz '47, Mr. and Mrs. Richard S. DeWolfe '36, Albert A. Livingston '49, Mr. and Mrs. Ernest M. Pace, Jr. '17, Mr. and Mrs. Robert Welles '15, Mr. and Mrs. L. Rozenberg '25, Mr. and Mrs. Raymond B. Stringfield '15, Duane Rodger '48, John Davis '56, Justin Gershuny '53, John L. Partin '25, William J. Moody '30, A. A. Kirsch '53, Mr. and Mrs. T. Gary Loomis '44, Mr. and Mrs. Sam Lunden '21, William K. Geist '50, Richard J. Steele '46, Frank E. Reeves '24, Mr. and Mrs. Robert Copsey '44, J. Reed Margulis '54, Sam Losh '54, Mr. and Mrs. Richard S. Holmgren, Sr. '19, Mr. and Mrs. Richard S. Holmgren, Jr. '50, A. F. Wagner '38, and Mr. and Mrs. W. K. Overturf '40. Also in attendance as guests were Messrs. Schmidt, Moody and Bernstein.—Albert A. Livingston '49, Secretary, 3850 Wilshire Blvd., Los Angeles 5, Calif.; Louis Young '50, Assistant Secretary, 2234 South Spaulding Avenue, Los Angeles 16, Calif.

Central Massachusetts Club Plans 1960-1961 Program

The M.I.T. Club of Central Massachusetts held an executive committee meeting early in September to discuss and lay out the program for 1960-1961. Officers for the year are: President, Haskell R. Gordon '38; Vice-presidents, Irvine F. Williamson '50, and Arthur Lowery '32; Treasurer, Robert N. C. Hessel '27; Secretary, Harry B. Duane '57; Assistant Secretary, Edward Dawson '51. Executive committee members are: George R. Blake '39, Robert H. Brown '22, Robert T. Dawes '26, Richard H. Harris '48, Harry J. Kahn '20, Thomas Kelly, Jr. '51, Max Levine '25, Carl F. Mellin, Jr. '50, Harrison N. Thibault '49, and Donald M. Whitehead '45.

For the past two years one of the Club's objectives has been to arrange meetings that will include and benefit the local school system, as well as provide a meeting place for Alumni. The Central Massachusetts Club is again intending to hold one large meeting to which members of the community's teaching profession will be invited. Dr. Irwin W. Sizer, Head of the Department of Biology at M.I.T., will speak on the importance of the Life Sciences and the new role that M.I.T. is playing in the scientific frontier explosion in this field. It is intended that Dr. Sizer will be in Worcester to address the M.I.T. Club in late February or early March.

The culmination of the Central Massachusetts Club's year will be in May with the annual meeting being held at the M.I.T. Faculty Club followed by the Pops Concert at Symphony Hall.—Harry B. Duane '57, Secretary, 15 Algonquin Road, Worcester 9, Mass.

New Mexican Alumni Hit the Trail and Fish

The M.I.T. Club of New Mexico held its spring meeting on June 4 and 5 at the Lazy-Ray Guest Ranch in the Jemez mountains. In attendance were: Mr. and Mrs. F. C. Alexander '32 and son Robert, Mr. and Mrs. Will Boyer '20, Mr. and Mrs. Leonard Ehrman '53, Mr. and Mrs. Norbert J. Eich '29, Mr. and Mrs. Max Ilfeld '24, Ted Morelli '47 and Miss Eleanor Siefsch, Robert Quinlan '30, Mr. and Mrs. Bruce Weston '54 and sons Robert and Russell, and Professor and Mrs. H. Bartel Williams '47.

The festivities opened with a cocktail party given by the owner of the Lazy-Ray, Howell Gage. After dinner we convened for a formal meeting at which Will Boyer spoke on the emergence of man in North America. The more active members of the club arose early Sunday, hit the trail (on horseback), and during the ride were served a very welcome trail breakfast of scrambled eggs, hot cakes, sow belly and coffee, in true western style. We saw a deer during the ride and some beautiful mountain country. Others fished for trout in the nearby beaver ponds of the ranch. We left Sunday afternoon, following a filling meal of fried chicken served family style.—Julian E. Gross '50, Secretary-Treasurer, 1208 Florida NE, Albuquerque, N. M.

Mexico Club Celebrates Its 50th Anniversary

It was entirely fitting that this Golden Anniversary should be marked by the Club's 12th Fiesta, certainly an event which was outstanding in the number of Alumni attending and the enthusiasm which was developed during the four days, March 10-13, 1960.

Shortly after noon, Thursday, March 10, our visitors and local Alumni gathered at the Hotel Vasco de Quiroga to start the Fiesta program. Its beginning was easy amid such camaraderie and the cocktails were good (and helpful). Two notable groups were among us:—Bill Dennen '17 and Mrs. Dennen with their family, consisting of William '42 and Mrs. W. Dennen, Richard '44 and Mrs. R. Dennen, and David '54 and Mrs. D. Dennen, displayed M.I.T. spirit at its best, an inspiration to all of us. The second group, consisting of 19 members of the Class of 1921 with 15 of their ladies, brought with it enthusiasm and *esprit de corps* which will leave a good target for other classes to shoot at for some time to come. A little later, the visiting ladies were driven away for a delightful luncheon at the home of Agustin Valdes '25.

There were 58 Alumni and guests who sat down for a luncheon marked by the excellence of the food and real conviviality. At each place there was a stein which reminded us of past Alumni dinners. Let us hope that this tradition may be continued here among us. In addition, there were beautifully hand-tooled leather money clips for the men and attractive luncheon sets for the ladies, all of which indicated the excellence of Mexican craftsmanship. Nish Cornish '24, and Ray St. Laurent, 1921 Class President, made a few remarks and there was a raffle which attracted much interest. The meeting closed with three verses of the Stein Song led by Herb DeStaebler '21.

Following the luncheon our guests were taken to visit the campus of the University of Mexico. Few were prepared for the tremendous impact of its magnificent conception and dynamic construction. Admittedly, a short visit of this kind could not even skim the surface, but Dr. Sandoval Vallarta '21, guided the visitors to outstanding points of interest and accomplished a great deal in a limited time. Shortly thereafter, all gathered in the auditorium for an event labelled "Technological Toot" (now like Litchfield's verses take on additional meaning). The discourse by Dean George R. Harrison of the M.I.T. School of Science on "Servomechanisms in Nature" was most interesting and informative.

Friday evening, March 11, we met at the Club de Industriales for cocktails and a buffet supper with excellent music, very interesting dances (one by Victoria Cornish), and drawing of very fine prizes. Once again, our visitors were impressed by the open-hearted Mexican hospitality.

Saturday evening, March 12, our *Noche Mexicana* marked the climax of

the Fiesta. Again, for the fourth year, our hosts were our President and his gracious lady, Sra. Luisa Cornish. The visiting Alumni were quite enthralled by the beauty of the garden with its splendid decorations and illumination. Adding to the color and gaiety of the scene, many of the local Alumni, with their wives and guests, wore Mexican regional costumes. Marimbas playing here and there and the white calla lilies which were so plentiful, all added up to an unforgettable picture of Mexico. To take care of the inner man, there were several *puestos* where each cook in native costume prepared her own specialty: *tortillas*, *puerco*, *enchilladas*, red beans, and on and on. Many of the visitors expressed the wish that it were possible to take back with them some of these appetizing dishes. Nor should other booths be neglected (and they weren't), where *tequila*, coffee and coffee with rum were available.

Almost a tradition, the *pinata* was a gaily colored beaver, very substantially constructed. It was hoisted in the air by means of a rope, maneuvered by Martin Cornish '51. Guests were blindfolded by Victoria Cornish, twirled around by the same young lady to add to their confusion and then permitted to belabor the beaver with a club. There was more missing than hitting, but eventually the beaver was broken enough to pour out a stream of gifts and favors. The *pinata* was followed by a splendid display of fireworks which concluded the entertainment. The consensus was that this was a tremendous evening which none of us will ever forget.

While in some respects, the 12th Fiesta was over, other events had been arranged for those who wished to participate. A visit to the Floating Gardens at Xochimilco proved to be an outstanding event. The gaiety of the scene where so many Mexican families and groups were enjoying a Sunday outing gave our visitors still another slant on Mexican life. Following an excellent luncheon at the Hotel Laredo, several groups continued on to a bullfight. A reception at the home of the U.S. Ambassador, the Honorable Robert C. Hill, on Sunday evening was the final event of the Fiesta. A large number of Alumni and guests was present and all had an opportunity to meet the Ambassador and Mrs. Hill.

As one visitor who feels that he can fairly speak for the others, we can only say, "Muchas gracias!" to our Mexican hosts for a very rewarding experience. We fully intend to return, if not for the 13th Fiesta, at least not too far in the future, and can most earnestly recommend it to fellow Alumni for their consideration.

Alumni visitors to Mexico City at the 12th Fiesta included: W. C. Davis '11, of Norfolk, Va.; W. C. West '11, of Ephraim, Wis.; R. C. Stobert '12, of Birmingham,

Ala.; Allen Abrams '15, of Wausau, Wis.; O. W. Hilbert '15, of Corning, N. Y.; W. L. Dennen '17, of Dalton, Pa.; and H. E. Lobdell '17, of Cambridge, Mass.

From the Class of 1921 the following were present: O. L. Bardes, of Cincinnati, Ohio; R. D. Cooper, of Chicago, Ill.; George Dateo and E. N. Dubé, of Boston; J. L. Gillson and J. S. Parsons, of New York City; D. C. Jackson, Jr., of Harmony Hills, Md.; I. D. Jakobson, of Oyster Bay, N. Y.; Philip Nelles, of Stoneham, Mass.; L. Randall, of Wellesley, Mass.; H. DeStaebler, of Lititz, Pa.; R. A. St. Laurent, of Manchester, Conn.; M. S. Sanders, of Wytheville, Va.; R. M. Shaw, Jr., of Beverly, N. J.; R. D. Snyder, of Bloomsburg, Pa.; A. A. Turner, of Metuchen, N. J.; and M. M. Zoller, of Cincinnati, Ohio.

Also present were: C. George Dandrow '22, of New York City; Arturo Ponce Canton '22, of Mérida, Yucatán; A. D. Ross '22, of Montreal, Canada; A. W. Davenport '23, of Sao Paulo, Brazil; R. H. Peene '23, of Toronto, Canada; K. C. Kingsley '23, of Newport Beach, Calif.; A. P. Kellogg '24, of Schenectady, N. Y.; G. B. Blonsky '25, of New York City; W. D. McCrea '25, of Waterbury, Conn.; A. D. Gass '26, of Greenfield, Mass.; R. E. Darling '27, of Texas City, Tex.; R. J. Joyce '28, of St. Louis, Mo.; and J. R. Clark '29, of Dallas, Tex.

Also in attendance were: R. M. Armstrong '33, of West Chester, Pa.; J. B. Calvo '33, of Panama, Republic of Panama; D. F. Cayce '33, of Scottsdale, Ariz.; E. S. Goodridge '33, of New York City; V. Estabrook '33, of Boston; W. H. Dennen '42, of Lexington, Mass.; Carlos P. Perez '45, of Buenos Aires, Argentina; J. M. Rault, Jr. '48, of New Orleans, La.; J. S. Bonner '50 and J. F. Moore '52, of Houston, Tex.; D. W. Dennen '54, of Indianapolis, Ind.; and Marco M. Suarez '55, of Monterrey, N.L.

Attending as active members of the M.I.T. Club were: M. A. Hernandez '13; George D. Camp '16; Gonzalo Garita '16; Manuel S. Vallarta '21; Viviano Valdés '21; Fernando de la Macorra '23; Clarence M. Cornish '24, President of the Club; T. M. Nevin '24; Agustin M. Valdés '25, Treasurer of the Club; Oscar Aros Villa '29; Leon Avalos Vez '29; Salvador Madero, Jr. '29 Emilio N. MacKinney '30; Lyman Chandler, Jr. '31; Alvino Manzanilla Arce '31, Secretary of the Club; Carl W. Ziegler '32; Willard D. Chandler, Jr. '34; Hippolyte L. Gerard '35; and Fernando Martinez Gallardo '35.

Other Club members in attendance were: Leonardo Zeevaert '40; Edwin Anisz '42; Enrique Curiel Benfield '43; Arturo Morales '44; Felipe Pescador '45; Pedro Albin, Jr. '47; Guillermo Lopez Herrera '47; James J. Rattray '48; Martin Cornish '50; Hector Valázquez '51; Max Michel '53; Octavio Morelos Valdés '54; Armando Santacruz '54; C. Miguel A. Santalo '54; Carlos Alonso de Florida '55; Guido D. Guzman '55; Alfonso del Valle '56; Raymond H. Danon '58; Daniel del Valle '59; and Rodrigo Zorrilla Martinez '59.—Edouard N. Dubé '21, Guest Secretary; James J. Rattray '48, Secretary, 905 Monte Everest, Lomas de Chapultepec, Mexico.

Oregon Club Meets Incoming Freshmen

Students who were to enter Massachusetts Institute of Technology from Portland and vicinity as freshmen in the fall were honored at a barbecue Saturday, July 23, at the home of Mr. and Mrs. Paul Gearhart. Co-hosts were Mr. and Mrs. Malcolm Blanchard '36, Mr. and Mrs. Donald Newhouse '50, Mr. and Mrs. Robert G. Pullman and Mr. and Mrs. William Rouzie '54. The men serve as educational counselors for M.I.T. and interview Oregon applicants. There were five honorees, of whom Karen E. Thomlinson '64, and Dean R. Casperson '64, are Clatskanie National Merit Scholarship Award winners. Other honorees were Richard Joslin '64, David Holden '64, and Rollie Seibert '64. Upperclassmen attended the party also to get acquainted and to help explain campus life.

On September 22 the M.I.T. Club of Oregon had a dinner meeting at Ireland's at Lloyds. Fred G. Lehmann '51, Assistant Secretary of the M.I.T. Alumni Association, was guest speaker for the evening, bringing the Alumni up to date on recent developments at their Alma Mater. After the dinner meeting a tour of the Hyster Manufacturing Company plant was planned to bring the evening to an interesting close.—Malcolm A. Blanchard '36, Secretary, 2546 S.W. Vista Avenue, Portland 1, Ore.

Cincinnati Club Elects E. A. Fox President

For a highly entertaining climax to the year's activities, the M.I.T. Club of Cincinnati held its annual beer party on June 1. We were the guests of the Wiedemann Brewing Company for a plant tour and buffet supper on the spectacular roof garden. Frank Rickers '22, Director of Brewing for the Wiedemann Company, made the arrangements. The usual volley ball game was canceled for fear one of the members, inspired by the excellent draught, might chase a ball over the eighth floor parapet.

Charles Urban again took the honors for having come from the earliest class. A member of the Class of 1891, he finished the plant tour in better shape than many of us who graduated in the '50's.

Elections were held after supper and the following officers were chosen: Sheldon Thorpe '52, President; Frank Schmaltz '59, Secretary; and Sam Crew '34, Treasurer. Because Sam has had a reasonably successful season with his racing stable, the members felt perfectly safe in re-electing him to his financial post for another year.

The following attended the meeting: Jim Stolley '52, Samson Crew '34, Robert Schildknecht '30, Sheldon Thorpe '52, John Ebersburger '47, Bob Keefe '51, Frank Rickers '22, Gerald Saul '58, Eleanor Semple '51, Gerald Burns '51, John Andrews '59, Robert Deshon '40, Clarence H. Spiehler '08, Howard Schwartzman '51, Norman Spofford '33, Charles Urban '91, Charles D. Axelrod '48, George F. Crummey '36, Raymond

W. Pelley '45, Frank Schmaltz '59, Frank Iskra '48, Oliver Bardes '21, John Fulmer '59, Richard Becker '59, R. A. Ormiston '48, George Michel '53, and guest, Frank Iaconetti, and Messrs. Rothstein and Mosley.—James S. Stolley '52, Secretary, 11 Beverly Drive, Hamilton, Ohio.

Dr. Stratton to Address New Jersey Alumni

The meeting schedule for 1960-1961 will be as follows: Wednesday evening, October 5, 1960; Wednesday evening, December 7, 1960; Wednesday evening, March 8, 1961; Tuesday evening, May 9, 1961.

Dr. Julius A. Stratton '23, President of M.I.T., will address the Club at the December 7 meeting. This will be an after-dinner meeting and approximately 350 people are expected to attend. The annual ladies night and dinner has been scheduled for May 9, with Mrs. Charlotte Montgomery, author and columnist for "Good Housekeeping" magazine as the speaker.

Mr. Warren J. King '48, has resigned as Vice-president since he is moving to Chicago as Director of Communications for Albert Raymond & Associates.

Board members of the Club are serving on the following committees: educational council—Stuart G. Stearns '39, chairman; scholarship—John M. D. Walch '48; publicity—Donald G. Espey '47; attendance—James A. Daley '50; program—Henry G. McGrath '36, chairman; house—Robert W. Tirrell '20; membership—Sumner Hayward '21, chairman; finance—Joseph Wenick '21, chairman.—Howard T. Milius '38, Secretary, 9 Tuxedo Place, Cranford, N. J.; Philip E. Sperling '52, Assistant Secretary, 43 Lewis Street, Cranford, N. J.

Philadelphia Club Gets Outstanding Speakers

One hundred and five of the local membership enjoyed a change-of-pace social evening at the Llanerch Country Club on Friday, May 27, 1960. Wiley Corl '39 and Tom Griffiths '57 arranged an enjoyable evening consisting of a cocktail hour, dinner and dancing. We had representation from classes ranging from 1915 to 1959.

Plans are in progress for next season's events. The first dinner meeting was to be at the Franklin Institute on Tuesday, October 18. For this evening, Ken Lord '26 obtained an outstanding speaker, Charles Stark Draper '26, Director of the Instrumentation Laboratory, and Head of the Department of Aeronautics and Astronautics at M. I. T. Bill Hargens '41, recently promoted to a Director of Research at the Franklin Institute, made arrangements for the meeting.

For our second event, we will hold our election-dinner-meeting at the Barclay Hotel on Monday, January 23, 1961. W. W. Pleasants '33, recently appointed RCA Manager of the Alaska Site, will return from Alaska to tell us about the Ballistic Missile Early Warning System (BMEWS) Project.—Herbert R. Moody '41, Secretary, 3010 Tower Road, Hunt-Ingdon Valley, Pa.

James Eacker Speaks to Chicago Alumni

Fifteen members of the Chicago Educational Council, which includes the club officers, met for dinner September 7 at the University Club. We were privileged to have James Eacker '55, Institute Executive Secretary of the Educational Council, as our guest speaker. Jim gave us additional insight into the importance Tech attaches to the reports on prospective students interviewed by council members, and outlined the overall student selection procedure. The meeting was arranged by Bob Faurot '44, Regional Council Chairman.

At 8 p.m. a reception was held for incoming Chicagoland freshmen, their fathers, current undergraduates, council members, and club officers. President Dutch Seifert '19, made a brief introduction and a very pleasant and valuable evening was had by the group of about 75.

Coming up, September 24 was the "Barrel of Fun Fest" joint-meeting with the M.I.T. Club of Milwaukee in their friendly city, including an amble and sample trip through the Miller High Life Brewery, and dinner at the famous John Ernst German Restaurant. Arrangements for this unusual event were made by Al Alschuler '35, and Joe Dietzgen '41. Wunderbar nicht!—Warren J. Meyers '41, Secretary, 4220 West Belmont Avenue, Chicago 41, Ill.

Technology Matrons Ready For Their 61st Year

As the Institute whirls into its Second Century, the Technology Matrons find themselves 61 years young, and with more than 2,000 ladies eligible for membership (there are no dues). Made up of women staff members and wives of the Faculty and staffs of M.I.T. and its associated laboratories, the Matrons' purpose is to foster friendly relations, share mutual interests and furnish effective service to the Institute.

The friendly relations were easily fostered last year at the opening tea at the President's house, at 32 parties, and at Christmas parties.

The Foreign Students Committee tries to arrange an invitation for each foreign student to visit an M.I.T. home at least once during the year. The Student Furniture Exchange puts its profits into a fund known as The Student Aid Fund. The Committee for Student Service believes its main function is to "be there when needed," and the Student Mixers Committee pays special attention to freshmen.

"Tours of the Institute," a popular project in the past, was revived last year; Barbara Ward spoke on "Troubled Africa" at the annual dinner with husbands; and the annual luncheon was held in May at the Wayside Inn in Sudbury.

It is also of interest to note that some of the matrons have formed an investment club. Perhaps their findings will help achieve the proposed program for the coming year.—Jere Ellis Frick.

Copeland Becomes Head Of Lehigh Valley Club

The spring meeting of the M.I.T. Club of the Lehigh Valley was held last June 29 at Ross Common Manor near Wind Gap, Pa. About 17 members attended, accompanied by ladies. Bob Dean '48, vice-president, conducted the session in the absence of Jack Smyser '35, who was away on business. The treasurer, Arnold Copeland '40, reported a small temporary deficit due to the expenses of the winter meeting. Bob then gave the results of a questionnaire on what to do about our financial situation. By a small margin, it was the consensus that the annual dues should be increased from \$3 to \$4. It was also announced that Alumni Fund donations no longer would be earmarked for scholarships for students from the local area because of lack of interest in this designation.

The nominating committee's slate of officers for the coming year was elected unanimously, as follows: M. A. Copeland '40, president; W. A. McGahan '47, vice-president; W. V. Bassett '39, secretary; W. F. MacKenzie, Jr. '45, treasurer, and E. C. Telling '42, D. J. Blickwede '48, J. T. Acker '24, W. C. McHenry '24, members-at-large.—J. T. Acker '24, Secretary, 154 West Langhorne Avenue, Bethlehem, Pa.

New Officers Chosen By Rochester Alumni

A successful annual meeting was held on September 24 at Mendon Ponds. Electric lights at Hopkins Point Cabin made the event brighter than usual. Under John O'Brien's direction the committee, including Al Gilbert '49, Bill Hosley '48, and Bob Sterrett '57, provided the usual outstanding steak dinner. The following officers were elected for the 1960-1961 season: President, Leo Cravitz '44; President-Elect, Charles F. Payne '33; Vice-president, H. Sheldon Smith '31; Secretary, John D. O'Brien '51; Assistant Secretary, Gail Millard '58; Treasurer, William E. Summerhays '41.—Arnold Mackintosh, Jr. '44, Secretary, 164 Glen Haven Road, Rochester 9, New York.

Northern California Elects New Officers

The M.I.T. Club of Northern California held its annual meeting at the San Francisco Naval Shipyard Wednesday evening, June 8. Forty members enjoyed a tour of the shipyard followed by dinner and a business meeting. During the business meeting officers were elected for the ensuing term: John D. Rittenhouse '40, President; Royce Greatwood '24 and Fred Noonan '40, Vice-presidents; Keatinge Keays '55, Secretary-Treasurer; Martin D. Robbins '56, Assistant Secretary-Treasurer.

Interesting talks were given after the business meeting by Cmdr. Alan M. Thewlis '40, and Capt. John Duke, Jr. '46, concerning the history of the shipyard and some of the background of present work in the naval facility.—Keatinge Keays '55, Secretary-Treasurer, 2239 40th Avenue, San Francisco, Calif.

Sloan Fellows

The 1959-60 Sloan Fellows returned from Europe on June 6 after a highly successful 16-day visit to England, France, Belgium and Germany. In the course of the visit the Fellows had the opportunity to meet with men of top rank in industry, finance, and political affairs—including such distinguished leaders as Sir Oliver Franks, Chairman of Lloyd's Bank; Jacques Rueff, French jurist and statesman; L. A. Bekaert, Belgian industrialist; and Dr. Hermann Abs, German financial and industrial leader.

Forty-four Sloan Fellows, selected to form the 1960-61 group, arrived at M.I.T. on June 18 to begin their year of study. The group includes men from 18 states and three foreign countries.

Since the last issue of the Technology Review and the publication of the Directory of Sloan Fellows, there have been many changes in assignment for members of the Sloan Alumni group. These include: William H. Feathers, '52, appointed president of Union Carbide Metals Company; Cyrus V. Helm, '58, elected president of International Air Drilling Company; Samuel J. Davy, '58, to be Director of Engineering, National Company, Inc., Melrose, Mass.; appointment of James F. Bourquin, '54, as general

manager, Whirlpool Corporation's St. Paul Division; appointment of Frederic S. Beale, '39, as staff engineer at Lenkurt Electric Company, Inc., San Carlos, California; assignment of Robert S. Williams, '57, as Titan II program director of the Martin Company; designation of Gaynor H. Langsdorf, '41, as manager of Executive Development, Standard Oil of California. Two assistants to the president have been designated: George C. Brainard, Jr., '52, to that position in the Schwitzer Corporation, Indianapolis, and Stanley Demain, '60, to that position in Avien, Inc., Woodside, N.Y.

Other changes include: John B. Beckwith, '58, manager of manufacturing engineering, Associated Spring Corporation; Earl L. Bockstruck, '59, Assistant to Plant Superintendent, Laclede Steel Co.; Andrew S. Clark, '55, Technical Service Department, Solvay Process Division, Allied Chemical Corporation; David H. Everest, '54, assistant to general superintendent, U.S. Steel Corp., Youngstown; Hugh P. Foreman, '54, assistant division manager, Alabama Power Company, Montgomery, Ala.; Thomas V. Griffiths, '57, supervisor of operations, Chemicals Section, Atlantic Refining Co.; Joseph F. Hutchinson, '50, manager, Automobile Tire Engineering, Goodyear Tire & Rubber Company; Francis L. Rees, division engineer, Atchison, Topeka and Santa Fe Railway Company, Fort Madison, Iowa; William E. Sehn, '58, director of reliability for the Fisher Body Division, General Motors Corporation.—John M. Wynne, Room 52-455, M.I.T.



Some of last year's Sloan Fellows left for Europe, May 20.

Deceased

WILLIAM L. HILLYER '87, August 26, 1959
 OSCAR E. NUTTER '87, February 28*
 CHARLES J. RIDGWAY '88, June 5
 BENJAMIN W. GUPPY '89, July 10
 EDWARD S. BLACKMER '91, August 11, 1959
 HAROLD M. CHASE '94, July 6*
 SAMUEL A. MAVERICK '95, May 24, 1959
 WILLIAM E. FIELD '96, September 27, 1959
 MYRON FULLER '96, August 21*
 WILLIAM S. MATTOCKS '96, June 16, 1959*
 MARY L. FOSTER '97, June 21*
 PERCY M. SMITH '97, April 7*
 FRANK EDWARD UNDERWOOD '97, September 8
 FRANK ELIJAH UNDERWOOD '97, May 18, 1959
 IRVING B. DODGE '98, August 18*
 EVERETT C. EMERY '98, February 21
 RALPH HARRIS '98, June 25*
 WILLIAM A. ROBINSON, JR. '98, November 5, 1959
 ASHLEY B. WHITMORE '98, February 24, 1959*
 EDWARD E. ALBEE '99, October 15, 1959
 ARTHUR F. BREWER '99, May 11*
 HERBERT H. DAKIN '99, May 6, 1959
 HAROLD W. GAY '99, February, 1959
 EDWIN A. PACKARD '99, May 13*
 EDNA CHANDLER THOMPSON '99, July 12*
 LOUIS B. BREER '00, May 18*
 LEWIS H. BULLARD '00, December 28, 1959*
 JAMES C. HECKMAN '00, December 2, 1959*
 CHARLES C. JOHNSON '00, April 20*
 ARTHUR I. KENDALL '00, June 20, 1959*
 PAUL J. OBER '00, October, 1959
 CARLOS SADA-MUGERZA '00, July 17*
 FRANCIS K. BAXTER '01, January 24, 1959
 PHILIP L. CRITTENDEN '01, June 4
 CARL A. IVERSON '01, October, 1959
 LOUISE M. COTTLE '02, March 9
 ARTHUR E. GRIFFIN '02, May 21*
 HOWARD C. JUDSON '02, June 19*
 HENRY P. MOLTEDO '02, June 11*
 ERNEST B. MACNAUGHTON '02, August 23*
 FRANCIS A. NAGLE '02, June 3*
 ARTHUR H. NICKERSON '02, September 2
 JAY H. SABIN '02, January 30, 1959*
 HAROLD H. DILLON '03, February 13
 WILLIAM E. MITCHELL '03, July 31
 ANNIE M. MULCAHY '03, September 3, 1959
 GEORGE A. TRUELSON '03, December 6, 1958
 JEREMIAH J. DONOVAN '04, May 2*
 GEORGE B. HARRINGTON '04, May 12*
 LEWIS T. HOWARD '04, December, 1959*
 GUY P. PALMER '04, July 16*
 HENRY S. PITTS '04, December 30, 1958*
 GORDON M. PROUDFOOT '04, February 27*
 RUTHERFORD H. ROGERS '04, 1958*
 JOHN N. SPARGO '04, July 25, 1959*
 ARTHUR C. WILLARD '04, September 11
 ELBRIDGE G. ALLEN '05, January 7*
 RALPH B. FAY '05, February 5
 WILLIS F. HARRINGTON '05, September 8*
 HAROLD G. HIXON '05, July 2*
 JULIA WELD HUNTINGTON '05, January 20
 THOMAS E. JEWETT '05, May 27*
 HENRY A. KIRKWOOD '05, January 7
 FREDERICK A. PIRIE '05, August 26*

DANIEL P. POUSLAND '05, 1959*
 MILTON L. RUBEL '05, March 23*
 GEORGE W. SCOTT '05, May 11*
 WALDO TURNER '05, June 17*
 WILLIAM W. GAYLORD '06, November 20, 1959*
 SIDNEY H. GEORGE '06, May 13, 1959*
 HOLDEN C. RICHARDSON '06, September 2
 JOHN DONALDSON '07, May 22*
 LAWRENCE C. HAMPTON '07, April 4*
 HERBERT B. HOSMER '07, June 29*
 CHESTER L. HOWE '07, July 28, 1959*
 DONALD E. RUSS '07, June 27*
 JAMES R. VEDDER '07, September 2, 1959*
 CHESTER A. VOSE '07, June 28*
 HENRY T. VOGELBERG '07, April 8*
 EDWARD C. BROWN '08, July 26, 1959*
 JOHN A. KYDD '08, May 22*
 WILLIAM H. PRESSON '08, June 25*
 JOHN A. REMON '08, May 9
 IRVINE S. TAYLOR '08, May, 1959*
 HAROLD E. WEEKS '08, June 30*
 ERNEST COURLEY '09, March 8
 WILLIAM B. JENKINS '09, May 21
 JOSEPH L. RICHARDS '09, August 11, 1959
 FRANK R. SCHELL '09, December 5, 1959*
 MICHAEL V. TERRY '09, July 12, 1959*
 VAN TUYL H. BIEN '10, August 19*
 RICHARD O. FERNANDEZ '10, August, 1960
 ARTHUR J. FOOTE '10, August 10*
 LESLIE E. GEARY '10, May 19
 ALBERT C. R. HERBERT '10, June 26
 ALEX F. JACKSON '10, August 30
 HARRISON A. SMITH '11, April 7*
 CHARLES R. STOVER '11, July 4, 1959*
 ANDREW F. ALLEN '12, June 1*
 SAMUEL H. BROWN, JR. '12, July 27
 GUY R. HICKEN '12, January 2, 1959
 LESLIE M. HUGGINS '12, December 11, 1959*
 CHARLES L. LEVERMORE '12, July 15, 1959
 WILLIAM J. MAGUIRE '12, July 6*
 EDMOND A. SCHWARZ '12, February 23, 1959
 DUGALD STEWART '12, July 9, 1959
 RAYMOND F. BRALY '13, January 24
 JOSEPH L. DONALDSON '13, March 27
 PHILIP M. HAMILTON '13, August 2
 TRACY V. SCUDDER '13, May 28
 ARNOLD P. STURTEVANT '13, September 17, 1959
 HOWARD F. SUTTER '13, January 22
 ARTHUR F. TAGGART '13, August 22, 1959
 AUSTIN K. WARDWELL '13, February 19
 FAY B. WILLIAMS '13, January 10
 CORNELIUS J. CALLAHAN '14, June 4*
 JOSEPH A. DECKOP '14, June 13*
 WILLIAM A. ETHERTON '14, October 14, 1959*
 ELMER L. HATHAWAY '14, May 15*
 RAYMOND R. WEAVER '15, August 31
 NORMAN D. BAKER '16, August 19
 WILLARD R. CRANDALL '16, May 27*
 THOMAS W. LITTLE '16, August 5*
 CALVIN D. ALBERT '17, September 23, 1959*
 STANLEY W. HYDE '17, May 23*
 PHILIP B. WATSON '17, September 11
 YALE EVELEV '18, June 19*
 HAROLD W. FITCH '18, May 21*
 JOHN E. FULLER '18, July 29
 ALBERT HAERTLEIN '18, June 7*
 LESTER V. CHANDLER '19, December 18, 1959*
 GUSTAVE LEVY '19, August 13
 OLAUS K. LYSHOLM '20, Nov. 1, 1959*
 ALEXANDER SCHWOLLMAN '20, 1960*
 THEODORE D. WESTFALL '20, July 23, 1959

FRANCIS J. CALLANAN '21, February 15*
 PAUL LUDWIG DEYLITZ '21, July 23*
 ELIOT UNDERHILL '21, June 2*
 JAMES W. D. ARCHIBALD '22, June 25, 1959*
 HAMILTON BEATTIE '22, December 20, 1958*
 WILLIAM H. BOVEY '22, June 1, 1959*
 EDWARD L. BROWN, JR. '22, June 6*
 GEORGE F. FYNN '22, June 1*
 DAVID WADE GUY '22, May 28, 1960*
 C. ROGER LAPPIN '22, August 20, 1959*
 JAMES T. MULLIN '22, 1960*
 AUGUST P. MUNNING '22, 1960*
 A. HUTTON VIGNOLES '22, June 2*
 GEORGE CALINGAERT '23, April 16*
 NORBERT H. FELL '23, September 29, 1959*
 RALPH W. GOSNELL '23, September 19
 EDWIN HOBBS '23, July 20*
 HENRY S. KORETZ '23, November 15, 1958*
 J. ELSWORTH ROGERS '23, June 14
 JAYSON C. BALSBAUGH '24, July 17*
 SAMUEL E. COTTER '24, August 28, 1959*
 DANIEL N. OFFICER '24, September 1, 1959*
 R. E. CERNEA '25, November 18, 1959
 ARTHUR P. CLARK '26, December 25, 1958
 PHILIP L. HATCH '26, July 28, 1959
 BESSIE W. HOWARD '26, May 31
 EDWARD F. KERNS '26, August 1, 1959
 WILLIAM F. RIVERS '26, August 29*
 ROBERT L. WOODRUFF '26, February 14
 LEWIS F. BAKER, JR. '27, March 1960*
 ALF K. BERLE '27, July, 1960*
 EDWARD C. CRAIG '27, August 8*
 RICHARD W. SPRY '27, May 23*
 HENRY B. DUNCAN '28, December 17, 1959*
 ISAAC H. TRABUE '28, July 5*
 ARTHUR W. GULLIVER '29, January 18*
 HOWARD T. ORVILLE '30, May 25
 WENDELL M. OSGOOD '30, March 26
 MARGARET C. HASSETT '31, February 27
 GEORGE C. WEAVER '31, March 4
 PAUL A. ANDERSON '32, February 15
 WALTER H. BIRNIE '32, August 18
 KATHERINE A. LYONS '32, June 15
 EARL R. MOORE '32, January 12
 JAMES M. SCOTT '32, June 19
 LAWRENCE H. HURON '33, January 22*
 WILLIAM E. SOULE, JR. '33, June 20*
 GEORGE K. WITHERS '33, May 3, 1959*
 RAYMOND W. FERRIS, JR. '34, June 13
 VINCENT P. COOK '35, July 13
 HARRY UDIN '37, April 2
 WILSON B. KEENE '39, April 30
 J. WILSON MOLLER '39, January 12
 GEORGE M. PHANNEMILLER '40, June 23*
 THEDA L. WATERMAN '40, March 15, 1959*
 IGNACIO PEREZ-FERNANDEZ '41, 1960
 BERTINE A. WHITING '42, January 26
 GEORGE F. NAPHEN, JR. '43, April 9, 1959
 CHARLOTTE O. COUES '45, February 4
 KUNG-CHIH WANG '45, September 3, 1959
 EARLE R. MARSHALL '48, July 8
 HAROLD T. GORANSON '49, January 18
 RICHARD F. FROST '51, November 11, 1958
 FREDERICK A. HADDEN '51, July 16*
 ALEXANDER W. URLING, JR. '52, Jan. 6
 JORGE DIENA '54, January, 1960*
 ATSUSHI MATSUO '56, May 30*
 TOHRU UCHIDA '58, July 26, 1959
 DELBERT L. NALL '59, March 3
 *Further information in class notes.

Class Notes

'87

The editors of The Review received the following notice from Karl L. Nutter '19:

Oscar E. Nutter passed away on February 28, 1960. He was within three days of reaching his 96th birthday. He was born in Winchester N. H., and raised in Somersworth, N. H. Graduating from the Somersworth high school in 1882, he worked for a year before entering the Institute in 1883 where he took the Mechanical Engineering Course.

After graduation he became associated with the Pettee Machine Works of Newton Upper Falls, Mass. This firm became Saco-Lowell Shops, manufacturers of textile machinery. He was with this firm for 45 years in various positions and for many years was general superintendent of the Newton division. He retired from Saco-Lowell Shops when 68 and became one of the incorporators and the treasurer of a firm formed to manufacture hypodermic needles, the Vita Needle Company of Needham, Mass. He was active in that firm for the rest of his life.

In 1892 he was married to Clara E. Locke of Waban, Mass. On June 15, 1959, their family helped them celebrate their 67th wedding anniversary. Oscar Nutter was born and raised in the Society of Friends and maintained an active interest in it. He was a collateral descendant of the Quaker poet John Greenleaf Whittier. For some years he was on the Board of Moses Brown School of Providence, R. I., a school identified with the Quakers. In addition he was actively engaged in the work of the First Methodist Church of Newton for more than 70 years, being president of the Board of Trustees for some years. He also was a member of the Newton school committee for a while and a trustee of the Newton Center Savings Bank.

He is survived by his wife, Clara Locke Nutter, of Newton Upper Falls, Mass., and by his four children, Dr. Denton G. Nutter of Newton Center, Helen N. Hartman of Boston, Karl L. Nutter, of Needham, Mass., and Lois N. Shaw of Middleboro, Mass. He is also survived by five grandchildren and seven great grandchildren.

One afternoon in October, 1959, the writer drove him to Thompsonville, Conn., to visit N. P. Ames Carter, also of the Class of '87. He took with him an almost complete album of pictures of the 1887 graduating class. These two gentlemen sat side by side on a divan for an hour or more discussing the history and vital statistics of nearly every member of the class, with nothing more than a picture taken more than 70 years ago as a clue. As the writer watched those two alert old

gentlemen relive the days long gone, he was impressed with the real meaning of the phrase "to grow old gracefully."

'91

Such a cheerful word comes from San Mateo, Calif., from **Bradford Choate**. Only a short time ago they declined to renew his automobile license, because his eyesight was failing a bit. He wrote, "At first I thought it was terrible, but now I don't care. If I want to go, I take a bus, or telephone for a taxi; otherwise I walk." And now he has been hospital-bound for weeks, but he pulled through. "I never knew I had so many friends—messages from everywhere. I doubt that my stationary will hold out to acknowledge them all. I have had a little heart trouble, and my hearing bothers me some, but my eyes are no worse. I do enjoy that M.I.T. magazine."

Little can be said of '91 Alumni Day in June. The crowd was stupendous, and Tech is doing and planning astounding things. **Linfield Damon** and his son Sherman sat with me at the tent luncheon and it was wonderful to learn about what M.I.T. means to civilization.

Our class records show 14 living members, and from the reply cards received in June, or otherwise, we have heard from all but one. Each of us is doing as well or better than could be expected.

In August I had a delightful visit from **Ernest Tappan** and he brought with him a large trunk full of '91 records and papers which he had preserved, covering these 70 years. As I unlocked the trunk

the first items to fall out were the stories of two of our best, **Barney Capen** and **Elisha Bird**. Remember Barney, the mascot of '91, such an affectionate, loving, loyal '91 man; and Elisha the artist, exquisite, docile, lovable, and a nationally known expert on book plates.

The one thing we '91 men want is to get together for our 70th reunion. **Charles Urban** has put it so well. Here is his letter: "Herewith I am enclosing the card showing that I will not be present at the Reunion of M.I.T. Class of '91, to be held next Monday. I would, however, and for several reasons, like to be present at the reunion next year, and if I live, will bend every effort to be present. First, I have never attended a Class Reunion. Secondly, when I was at Tech we were in the old building on Boylston Street, and I have never seen the new Tech. Tremendous changes have undoubtedly taken place and it should be most interesting to see them. Thirdly, the old gentleman with the long beard and the scythe has taken his inexorable toll, and it would be pleasant to sit around with some of the 'toughies' who have resisted his ravages and indulge in a few reminiscences." You will remember that Charles is our lawyer in Cincinnati. —William Channing Brown, Secretary, 15 Forest Ave., Hastings-on-Hudson, N. Y.

'92

The secretary was the only member of the class of '92 present at the Alumni Day luncheon last June. He and **Andy Fuller** sat together to represent the Fuller fam-

Happy Birthday

Birthday greetings are in order during October and November to two Alumni who are due to celebrate their 95th anniversaries; and to 6, 9, and 26 Alumni who are due, respectively, to turn 90, 85, and 80, as listed below with dates of birth:

October, 1865—**CHARLES L. FAUNCE** '88 on the 3d.

November, 1865—**FREDERICK H. MESERVE** '92 on the 1st.

October 1870—**HARRY S. MABIE** '97 on the 4th.

November, 1870—**CHARLES M. STAMP** '96 on the 3d; **EDWIN P. PARKER** '94 on the 26th; **JAMES C. KIMBERLY** '94 on the 29th; **EDWARD A. PORTER** '93 and **MILTON M. WHEELER** '94 on the 30th.

October, 1875—**DANIEL W. EDGERLY** '98 on the 2d; **HENRY R. VAHLKAMP** '97 on the 3d; and **JOSEPH C. NOYES** '98 on the 29th.

November, 1875—**HENRY C. MORRIS** '00 on the 1st; **EDWARD N. MILLIKEN** '98 on the 3d; **MAURICE F. DELANO** '98 and **CHARLES F. HARWOOD** '99 on the 7th; **CHARLES H. CORNEY** '00 on the 8th; and **MRS. SYDNEY M. WILLIAMS** '06 on the 17th.

October, 1880—**FREDERICK MATHESIOUS** '02 on the 1st; **GEORGE R. SPALDING** '04 on the 5th; **ROGER D. BABSON** '03 on the 7th; **JULIUS A. FURER** '05 on the 9th; **GEORGE A. QUINLAN** '08 and **HIRAM L. WALKER** '05 on the 10th;

CHARLES B. MAYER '05 on the 12th; **KENNETH C. GRANT** '02 and **ARTHUR F. MOHAN** '08 on the 15th; **BROTHER EM-MANUEL OFM** '07 on the 16th; **PHILIP W. MOORE** '01 on the 18th; **JAMES W. WELSH** '03 on the 20th;

GEORGE B. HARDY '05 and **ERNEST B. MACNAUGHTON** '02 on the 22nd; **KENNETH LOCKETT** '02 on the 24th; **D. DEAN KLAHR** '05 on the 26th; **CHARLES W. FISHER** '06 and **CARLE R. HAYWARD** '04 on the 27th.

November, 1880—**NORMAN E. BORDEN** '02 on the 4th; **J. RUSSELL JONES** '03 on the 15th; **LEVERETT H. CUTTEN** '07 on the 19th; **MISS ALICE F. BLOOD** '03 on the 25th; **WILLIS S. CAYPLESS** '06 on the 27th; **GEORGE B. WOOD** '03 and **JAMES B. WHITMORE** '05 on the 28th; and **FRANK W. BROWNELL** '05 on the 30th.

With the addition of these 43, the rolls of the Alumni Association will include a total of 96 nonogenarians and 773 octogenarians.

ily, and listened to a very interesting program.

Recently the secretary received a notice of the death, in July, of Mrs. Herbert Kales, the widow of **Herbert Kales**, who was our president at the time of graduation.

It is the sad duty of the secretary to report that he has just received notice, too, of the death of our classmate, **Harry A. Burnham**. Memorial services were held for him at the Bigelow Chapel, Mt. Auburn Cemetery, on Friday September 2.—Charles E. Fuller, Secretary, P. O. Box 144, Wellesley 81, Mass.

'94

Once more it is the sad duty of the Secretary to report another loss in our shrinking numbers with the death of **Harold Mayson Chase**, who died at Danville, Va., on July 6, 1960, and will be remembered as one of the most popular and able members of '94. Born at Dracut, Mass., in 1872, he graduated from the Lowell High School in 1890, and in that year entered M.I.T., where he was enrolled in the Department of Chemical Engineering. Throughout his course he had an excellent record and received his S.B. degree in 1894. Desiring a more advanced knowledge of organic chemistry, he returned to M.I.T. for another year, then took a position with Hugh MacRae in Wilmington, N. C., as overseer of a dye house. There he began the investigations on the chemistry of dyeing which resulted in his receiving another S.B. in Chemistry from M.I.T. in 1896. His position with the MacRae organization expanded, and was the only position he held until 1917, when he started working for the Dan River Mills at Danville, Va. While at Wilmington he also served as mechanical engineer and carried on researches that eventually led to new dyeing methods and the elimination of uneven dyeing of raw stock. The methods he developed are in use today.

Another of his inventions while at Wilmington was a method for regaining turpentine from stumps and lumber waste of the long leaf pine, which was plentiful in the back country. A plant for distilling turpentine was built and operated very successfully at first, but was later abandoned, due to the difficulty of removing carbon deposits which formed in the extensive piping system. At Wilmington he also was called upon to operate an ancient and run-down gas plant while a new one was under construction, and this he did with great success. He also assisted in the development of a large water power project on the Pee Dee River, which was of great importance. Also while at Wilmington, he made many experiments which advanced the process of mercerising cotton under tension.

Desiring to confine himself to the textile industry, in 1917 he took a position as chemist and assistant superintendent at the Dan River Mills. His first major assignment was to supervise the operation of a small dyestuff manufacturing

plant which supplied the mills with dye-stuffs that were otherwise unobtainable because of the war. Here he was obliged to reorganize an unworkable plant which had been built by a chemical firm. Through his knowledge of chemistry and chemical engineering, the plant was soon able to produce the product for which it was intended.

In 1919, Chase became chief chemist and superintendent of dyeing, and made many improvements in the supervision of what was probably the world's largest raw stock dyehouse, with a capacity of more than 750,000 pounds of cotton per week. Chase was noted for his willingness and ability in training young college graduates and in personally guiding them so they could assume responsible positions in the Chemical and Dyeing Departments at the Dan River Mills. Many of these young men were from southern textile schools, and under his tutelage were helped to become leaders at Dan River, or in other textile or allied industries, especially in the southern states. In 1937, Chase was made director of research, in addition to his duties as Superintendent of Dyeing, and devoted all his efforts to the problem of developing methods for applying fast colors to all types of fabrics.

The Proceedings of the American Association of Textile Chemists and Colorists states that many of his contributions to the textile industry have not been credited to him because of his extreme modesty and unselfishness. He always insisted that the younger men who worked with him get the full credit for the development of the new ideas. He developed and patented the long-chain-continuous-indigo dyeing process. Many other new processes, issuing from the Research Department under other workers names, were made possible through his help. Later developments included the "wrinkle-shed" treatment, which produces fabrics which are resistant to wrinkling and also are water repellent. In 1938, Chase received the Olney Award (Olney Medal), the highest distinction in the textile field. He was a charter member of the AATCC, and the second Chairman of the Southern Section. He was also a member of the American Chemical Society and the Virginia Academy of Science.

Chase was married during his residence in Wilmington, but the Secretary is unable to give the date or the name of his wife. The union was a very happy one until broken by her death in 1924. Harold retired (theoretically) in 1949, but was retained as consultant in dyeing and finishing until his death. Thus he had a continuous connection with Dan River Mills for more than 43 years. In these very recent years he had suffered somewhat from difficulty in walking, and his death came following a bad fall about a month earlier. The Secretary had known of this difficulty, as Harold had written him some five letters about the time of our 65th reunion.

Now another long friendship is broken. The class can be proud that Chase was a member of it.—Samuel C. Prescott, Secretary, Room 16-317, M.I.T.

'95

After the M.I.T. Alumni Association luncheon last June 13, which was held in the Great Court on the Charles, the Class of '95 held its 65th annual meeting, as required by Article V of its Constitution, adopted in Boston, June 5, 1908. In appreciation of their long continued interest in class and M.I.T. affairs, **Alfred P. Sloan** was re-elected president, and **Luther K. Yoder** was re-elected secretary.

On September first, 1872, your secretary saw the first light of day. Little did he suspect that on September first this year he would be taking this opportunity to thank his host of friends for their kind thoughts, the 54 cards, 3 bottles of Sherry, 2 boxes of cigars, and 11 callers. Some surprise for a young fellow of 88. Eh!

Monday, Sept. 12, the 140 miles per hour vicious hurricane Donna, just up from Florida, swept through the New England states and off to Nova Scotia. Reports so far for our Boston metropolitan district from **Charlie Berry**, in Lexington, **Luther Conant** in Cambridge, and **Ralph Lawrence** in Belmont, say they came through alright, although the main path of the storm was 100 miles westward through Springfield.—Luther K. Yoder, Secretary, 69 Pleasant St., Ayer, Mass.; A. D. Fuller, Assist. Sec., 120 Tremont St., Boston, Mass.

'96

At the Alumni Luncheon in the Great Court there is a special section for classes graduated over 50 years ago, and '96 now sits near the top. Bob and Mrs. Davis, Driscoll, Henry, Pierce, Pauly, and Smetters held a special ceremony of congratulation for the newest bride, presenting an orchid with the felicitations of '96 to **Mrs. Arthur Williams**, nee **Hattie Gates**. . . . At dinner in Rockwell Cage, '96 remembered John and his love for his class. . . . Henry, Pauly, Smetters, and Driscoll enjoyed a call from Joe Harrington, Jr., '30. His son Joe, now a student, is the third generation of Joe Harringtons to attend M.I.T. . . . On the blackboard in the Spofford Room where Course I gathered, there was printed "THE ONLY CLASS" over a circle enclosing 96 and below, "ALWAYS RIGHT SIDE UP". . . . Lewis E. Moore, '02, who came from Florida, said he'd have called on **George Harkness** if he'd known George was in Orlando.

William S. Mattocks of Lyndon, Vt., died June 16, 1959, according to Alumni Office notice, and **Frank L. Harlowe**, 320 North Main St., Washington Court House, Ohio died, but no date was given. The class would be grateful to any member who would express its sympathy to the relatives of the deceased. An asterisk marks both names in the class book.

Walter Leland of California, acknowledging receipt of the Secretary's letter, says he hasn't seen his intimate class-

mate **Eddie Bragg** since graduation. "I haven't received the Review since December. . . . Any unfounded rumor of my demise, I can say with Mark Twain, is a gross exaggeration. I am still attending the office every weekday and putting in 40 hours a week. . . . A few days ago I telephoned to **Charlie Hyde** and had a pleasant talk with him. He is retired from active business, and lives in Berkley, a short distance from my home in Walnut Creek and my office in Emeryville."

Myron L. Fuller died on August 21. The class sent flowers with its sympathy and the Secretary attended the funeral in Brockton. Myron was a famous and distinguished geologist, honored with medals and citations by countries all over the world. He had been chief geologist for Sun Oil Company; was advisor to several countries in Asia, Australia, Bermuda, Brazil, and Peru on artesian well problems; and made coal and oil investigations in Asia. He wrote many books and papers for publication. The *Brockton Enterprise*, founded by his father, and now published by his nephews, reported Myron's death, giving a graphic story of his life and work.—James M. Driscoll, Secretary, 129 Walnut St., Brookline, Mass.; Henry R. Hedge, Assistant Secretary, 105 Rockwood St., Brookline, Mass.

'97

Commander **Hunnell** had the opportunity in June of meeting with **Binley**, **Loomis**, and the Honorable **Proctor Dougherty**. Fred and Mrs. Hunnell shared their experiences on the cruise of the S.S. *Rotterdam*, which touched at some 20 ports, Rio de Janeiro, Cape Town, Cairo, Athens, and Lisbon, to mention a few.

Ed Osgood has just moved to 235 Hillcrest Drive, Reno, Nev., to be with his daughter and her children. Work is still the order of the day.

Through the courtesy of Joseph Kotanchick, '38, Secretary of the M.I.T. Club of the Virginia Peninsula, we have word about **Mrs. William C. Ewing**, Course VIII. We are sorry to learn that she is seriously ill and confined to the Patrick Henry Hospital, Newport News, Va. She would be much pleased to receive a note or a card from her classmates. . . . We regret to report the death of two of our classmates. **Percy M. Smith** died April 7, and **Dr. Mary L. Foster**, on June 21.—Augustus C. Lamb, Secretary, 61 Hillcrest Place, Amherst, Mass.

'98

There were present to represent the class at the luncheon on Alumni Day, June 13, 1960, the following classmates: Fred B. Dawes, Daniel W. Edgerly, Frederic A. Jones, and Edward S. Chapin; and as guests, Miss Marion L. Chapin and Mrs. Arthur T. Blanchard.

We wish again to thank those kind friends, as described in the '98 Class Notes of May 1960, who have been so helpful in supplying information to the class during the partial disability of the secretary because of eye trouble and other minor old age troubles.

We will call attention further to '98 Class Letter No. 25, July, 1960, which was sent out by President Edgerly, with interesting enclosures and remarks.

Our distinguished classmate, **Roger W. Babson**, continues his activity in numerous fields, statistical, collegiate and scientific. We are pleased to enclose in the notes the following announcement from the Gravity Research Foundation, New Boston, New Hampshire: "The Trustees are pleased to announce the following recipients of awards for essays for 1960: 1. \$1000.00—'Gravity and the Nature of Fundamental Particles' by Professor Lloyd Motz of Columbia University, Rutherford Observatory, New York. 2. \$300.00—'The Importance of the Noon-Midnight Red Shift' by Professor Banesh Hoffmann of the Department of Mathematics, Queens College, Flushing, N. Y. 3. \$200.00—'On the Question Whether Fast Motion or Fast Rotation or Vibration of an Object Can Decrease the Effect of Gravity on It' by Dr. F. J. Belinfante, Department of Physics, Purdue University, Lafayette, Ind. 4. \$150.00—'Can There be Shield for Gravitation?' by Dr. W. F. G. Swann, Director Emeritus, Bartol Research Foundation, Whittier Place, Swarthmore, Pennsylvania. 5. \$100.00—'Plant Form and Function Depend Greatly on Gravity' by Professor Charles J. Lyon, Department of Botany, Dartmouth College, Hanover, New Hampshire. Honorable Mention to: Professor Bryce S. DeWitt, The University of North Carolina, Chapel Hill, for his essay, 'Gravitational Research: The Coming Decade'; Mr. John O. Stoner, Jr., Palmer Physical Laboratory, Princeton, N. J., for his essay 'Generation and Detection of Gravitational Radiation'."

Supplementing Letter #25, there have come to hand through the Alumni Office or other letters, information concerning the passing of the following classmates: **Arthur C. Lawley**, 14602-18th St., S.W., Seattle, Wash., on July 17, 1958; **Ashley B. Whitmore**, 1054 Croydon Drive, Dayton 10, Ohio, on Feb. 24, 1959; **Mrs. George F. Partridge**, 99 Lexington Ave., Cambridge 38, Mass., on Oct. 7, 1959; **Ralph Harris**, 249 So. Berkeley Ave., Pasadena, Calif., on June 25, 1960; and **Irving B. Dodge**, 89 Main St., Ashland, Mass., on Aug. 18, 1960.—Edward S. Chapin, Secretary, Hotel Vendome, 160 Commonwealth Ave., Boston 16, Mass.; Frederic A. Jones, 286 Chestnut Hill Rd., Brighton, Mass.

'99

Edwin A. Packard, II, passed away on May 13, after a long illness. He had had a number of paralytic shocks, and for the last few years had been confined to a wheelchair. Your Secretary visited him in his Gulfport, Fla., home during the

winters of 1958 and 1959 and found him remarkably cheerful and philosophical under the circumstances. Ed was a native of Apponaug, R. I. He was married in 1906, at which time he was an assistant examiner in the U.S. Patent Office in Washington, D. C. In June 1921, he graduated from the George Washington Law School in Washington with a degree in Patent Law. From 1922 to December 1930, Ed was manager of the Patent Department of International Combustion and affiliated companies of New York State. He then became patent attorney for the Permutit Company of New York City, manufacturers of water-softening and water-treatment systems. From November 1933 to his retirement in 1952, Ed was patent attorney for the Dorr Co. (now Dorr-Oliver Co.), of Stamford, Conn. Ed held degrees in law and patent law, and was a member of both the New York State and Federal bars. He was recognized as a skilled counselor on patent procedure.

Edna M. (Chandler) Thompson, the only coed in Course V, died suddenly on July 12 in Worcester, Mass. She was the widow of John B. Thompson, M.D., former head of the Surgery Department of the Eastern Maine General Hospital of Bangor. She was born in Brunswick, Maine, and taught in the Brunswick schools before her marriage. She was formerly active in Medical Auxiliary, the Nineteenth Century Club, and her church. Since her husband's death in 1958, she had made her home with her daughters in Bridgewater, Va., and in Worcester, Mass.

Arthur F. Brewer, VI, died on May 11, from a heart attack, at his home in Wollaston, Mass. Before his retirement in 1948, he was manager and treasurer of the Holland Hutter Co., and Beatrice Foods, Inc., of Boston. . . . The *Boston Globe* for August 19, recorded the death of Mrs. Ethel Robinson, of Hingham, Mass. She was the widow of **Thomas Robinson**, who was Major of our freshman battalion. She was the author of several books on housing. . . . Notice has been received from the Alumni Office of the death of **William L. Wood, VI**, of Texarkana, Texas. No details were given.—Burt R. Rickards, Secretary, 349 West Emerson St., Melrose 76, Mass.; Percy W. Witherell, Assistant Secretary, 84 Prince St., Jamaica Plain, Mass.

'00

Our 60th Reunion was a very quiet one. So few indicated their intention of attending, no gathering of the usual type was arranged. Eight of the class, together with eight guests, met at the Twelve Hundred Beacon Street Motor Hotel for breakfast on Sunday morning as guests of Mr. and Mrs. **Newhall**. Those present were: Walter Kattelle, Alek Newhall and Alice, Jim Patch and Harriet, Charlie Smith and Elsie, Arthur Walworth, Percy Ziegler, and Elbert Allen. Other guests were Ruth Dakin, Minnie Lawley, and last but not least, Mr. and Mrs. Crawford and Mrs. Given of the former staff

of The Pines at Cotuit where we held our reunions for nine years. This breakfast was a great success and much enjoyed by all. We are greatly indebted to Alek and Alice for their generous hospitality. After the breakfast we adjourned to the nearby garden of the Newhalls where we enjoyed a social hour together.

The Alumni Day luncheon was attended by much the same persons as the breakfast. **Jim** and **Harriet Patch** were unable to come but we were joined by **Paul Price** and **Herbert Stearns**. We were able to sit together and thus continue our reunion. The evening banquet and entertainment were also attended by most of the party. Although small in numbers, our reunion was very satisfactory.

We regret that we must at this time, report a number of deaths of our classmates, news of which has reached us since the last issue of these notes. Evidently the gathering of data for the new Alumni Register has brought to light information not previously received. We have received word that **James G. MacDonald** is not living, date of death unknown. He was with us but a short time but may be remembered as having been on the 1900 baseball team which won nine games out of eleven played. **Russell H. Glover**, '01 is the only member of that team who may be living. . . . **Arthur I. Kendall** died June 20, 1959. He graduated with us in the Biology Department, subsequently getting various advanced degrees at Johns Hopkins, Harvard and U.S.C. He had a brilliant career in biology and medicine and retired as professor emeritus from Northwestern University School of Medicine. He had recently been living in LaJolla, Calif. . . . **Paul J. Ober** passed away in Oct. 1959. He was at M.I.T. but one year and then engaged in financial and investment work, living most recently in Medford. . . . **James C. Heckman** died Dec. 2, 1959. He was with us in our senior year, having previously received the degree of E.E. He is reported as having recently been senior engineer with Stevenson, Jordan and Harrison Co. in New York City. . . . On Dec. 28, 1959, **Lewis H. Bullard** died. He was with us in our first two years. He had been retired for many years, living in St. Petersburg, Fla.

On April 20, 1960, **Charles C. Johnson** passed away. He graduated with us in course X, Chemical Engineering. We have no information regarding his life and work. He had lived for many years in Cambridge. . . . **L. B. Breer** died on May 18th, 1960. He was with us for two years in the chemistry course and was a member of the Andover Club and K₂S. We know little of his career except that at one time he was with the E. & F. King Co. of Boston and later was Paint Department Manager for the same company in Norwood, Mass. After retirement he lived in West Palm Beach, Fla. . . . **Carlos Sada-Muguerza** died July 17, 1960. He apparently was with us but a very short time and has always lived in Mexico. With these losses the roster of our class is reduced to 69 names out of an original 400.—**Elbert G. Allen**, 11 Richfield Road, West Newton 65, Mass.

'01

I begin this year's series of class notes with a listing of the deaths of two classmates which were reported to me since I wrote the last notes: **Fred W. Claflin, I**, of Johnstown, Pa., who died on January 15, 1960; and **Philip L. Crittenden, VI**, from Milwaukee, Wis., whose death occurred on June 4, 1960. Claflin wrote for the class notes in March 1958, "Am too far along the Western slope of life to come to the reunion in '59 and am too busy to take the time off." I have no further information about Crittenden.

We have not heard from **Ed Belcher** for a very long time, but I have a clipping from a Portland, Maine's paper which tells us that Ed was married on June 30 in Antrim, N. H., to Mrs. Elizabeth Philpot Hayes, R.N. She is a graduate of Foxcroft, Maine Academy and the former Childrens' Hospital School of Nursing. She is employed in the pediatric department at the Maine Medical Center. Before his retirement, Ed was superintendent of maintenance at the South Portland Shipbuilding Corporation. He is an expert and authority on old clocks. The couple will live in South Portland.

The following are from replies sent in last spring. From **Charles Auer, III**, El Paso, Texas: "I am semi-retired, and if I do not transact some business, there is lacking frijoles and tortillas and perhaps sopa de arroz. Mrs. Auer is just one and one-half years younger than I, and I passed the 80 mark last September 17. I go to my office six days a week and, thanks to the Good Lord, I am active. I was honorary secretary for M.I.T. here in this district for 25 years, but am retired from that office. During my professional life I was stationed in Georgia, Old Mexico, New Mexico and El Paso, Texas. I have been here for 45 years. I am still very active in fraternal work and am secretary for two civic organizations here. We have one grandson and three great grandchildren. Kindest regards to all who have kept 1901 alive." . . . **Benjamin F. Clark, II**, of Washington, N. J., says that he has no news of interest, but gets a great deal of pleasure from the class notes.

Keep in mind that our 60th reunion comes next June and will probably be the last that many of us will see. You will hear more about it later.

I am still looking for news from those who have not sent any lately.—**Theodore H. Taft**, Secretary, Box 124, Jaffrey, N. H.

'02

Our class had but four members in attendance on Alumni Day in June, namely **Arthur L. Collier** accompanied by Mrs. Collier, **Lewis Moore**, **Dan Patch** and your secretary. The day was very pleasant, as were the listed events, and we regret that more of '02 were not present. Fortunately, we have heard from several others directly or indirectly. **Carlton B.**

Allen wrote that although 80, "I have nothing wrong with me, no aches or pains, nothing that a good smoke or a good drink or a good meal won't cure." He and his wife expect to take a South American trip this fall to celebrate the 20th anniversary of their wedding. Both are very fond of the sea. Allen had two years of sailing in his younger days. . . . **Robinson** writes that all is well with him down in Brunswick, Maine, and this is confirmed by Collier who called on him while the Colliers were vacationing this summer down on the Maine Coast. . . . From **John Marvin** it is learned that he is recovering fast from his accident of last winter and at the time of his writing in early July he expected to give up his crutches and be back to canes by Labor Day or earlier. He will not remain in Evergreen but move to an apartment in Denver for the winter months. . . . **Dan Patch** skipped the banquet on Alumni Day in order to get down to Friendship, Maine, for the celebration of the 55th anniversary of his wedding. If we may judge by the report in the local paper, **Dan** and **Mrs. Dan** had a wonderful time as guests of honor at a dinner party at Hotel Knox in nearby Thomaston with members of the family and friends.

Warren C. Taylor has been heard from in a letter to **Dan** who welcomed him to the "80 year Club of '02." We quote from his letter a brief sketch of his career: "After graduation from M.I.T. I spent some years in engineering practice, when I had the urge to teach. So I joined the faculty at Union College, Schenectady, N. Y. After 40 years in the Civil Engineering Department I retired in 1950. My life has been a busy one with activities in church, city, college and community service. Many of these continue after retirement." He has been an elder in the Union Presbyterian Church for fifty years and has led a Men's Bible Class most of the time. Gardening has always been his hobby and upon his retirement the Union College Engineering Alumni presented him with a small hot-house which he has attached to his house and he can now enjoy his hobby throughout the year. . . . **Mrs. L. Wallace Sweetser**, formerly of Wakefield, Mass., now lives at 39 Cedar Lane, Chester, Conn.

Our class has lost several members by death since the last notes: **Francis A. Nagle** died June 3, 1960 in Roseville, Calif., where he had been in the insurance and real estate business. In earlier years he had been engaged in breeding and raising heavy draft horses and in growing and shipping California fruit, especially Bartlett pears, to the eastern markets. . . . **Col. Howard C. Judson** died in the Naval Hospital in Jacksonville, Fla., on June 19, 1960 and was buried in the Arlington National Cemetery with full military honors on the 28th. Judson was a native of Newark, N. J., and attended M.I.T. for three years and then transferred to the U.S. Coast Guard Academy and was graduated in 1906. He entered the Marines in 1907 and in 1908 was transferred to the Atlantic Fleet and was marine officer on the U.S.S. *Ohio*. Subsequently he served in the Philippines,

South China, Cuba, Mexico and Haiti. During World War I he was in France and served as military observer on the staff of Admiral Sims. He was invalided home from France with mustard gas burns and later assigned to Haiti. There he put down an uprising, unarmed, by talking to the Haitians in their own language. His last duty assignment before his retirement was the Recruit Depot at Fort Royal, S. C. He had gained a reputation as a "sea lawyer" from his legal work during his military career. Judson was a 32nd degree Mason and was a charter member of the Boumi Temple Shrine in Baltimore. He also belonged to the M.I.T. Alumni Association of South Florida and the Retired Officers Associations of Washington and Tampa. He left his wife, Mrs. Mabel G. Judson; a daughter, Mrs. W. W. Novkov of Akron, Ohio; and two sons, Howard C. Judson, Jr., in California, and Frank Judson in Texas; and four grandchildren.

The Alumni Office reports the following deaths: **Jay H. Sabin** of Stillman Valley, Ill., on January 30, 1959; **Arthur E. Griffin** of Winchester, Mass., on May 21, 1960; **Henry P. Moltedo** of East Boston on June 11, 1960; and **Everett P. Turner** of Colby College, Waterville, Maine.

Through a press clipping sent to Dan Patch by a friend in Portland, Ore., it is learned that **Ernest B. MacNaughton** died last August 23. MacNaughton was undoubtedly one of the most prominent citizens of that city and one of the leading citizens of the state. He started his career in Portland in 1903 as a draftsman with Edgar Lazarus, an architect. In 1906 he became a member of MacNaughton, Raymond, and Lawrence, architects and engineers, and in 1911 was with the firm of Strong & MacNaughton, dealing in property planning, construction, and management. Later he entered the banking and investment fields and in 1925 was vice-president of Ladd & Tilton Bank until it was sold to the U.S. National Bank. He then entered the Strong-MacNaughton Trust Co., and remained there until in 1928 he was appointed vice-president of The First National Bank of which he became president in 1932. He became chairman of the board in 1947 and served in that capacity until the time of his death. MacNaughton was also interested in the newspaper publishing business, being a director of The Oregonian Publishing Co., from 1939 to 1950 and president from 1947 to 1950. He had a deep interest in education and served as interim president of Reed College from 1948 to 1952, having previously served as regent, trustee, and president of the board. He held the honorary degree of L.L.D., conferred by the University of Oregon, and in 1958 the same institution awarded him a citation as an outstanding citizen of the state. His activity and participation in civic affairs equalled if they did not exceed his business interests. He is survived by his widow, Mrs. Cheryl M. MacNaughton; two sons, Boyd and Malcolm of Honolulu; and a daughter, Mrs. Stuart Kerr of Portland.—Burton G. Philbrick, Secretary-Treasurer, 18 Ocean Ave., Salem, Mass.

'03

Greetings to fellow classmates, both near and afar, from your new secretary. I will endeavor to continue the long enthusiasm of our former faithful secretaries, **Jim Cushman** and **Roy Gould**.

I hope you will renew the former English endeavors of genial Arlo Bates and add to my notes, even humorous anecdotes, pertaining to our former sojourning about the hallowed halls of former Walker and Rogers Buildings. Our entire studies were confined within them, save a few seemingly isolated lectures in Trinity Place with Professor Cross. How amazing for us today, in returning on Alumni Day, to see the vast expanse of ornate structures, that adorn the picturesque shores of the Charles River Basin! I anticipate more recollections of our college days, and the illustrious Brunswick Hotel celebrities.

We regret to announce the death of **William E. Mitchell**, 78, who retired as head of Georgia Power Company in 1947. He died at his home in Atlanta on August 17, 1960. In 1948, Mr. Mitchell went to France as a member of the Economic Cooperative Administration, a part of the Marshall Plan. He was awarded the French Legion of Merit, and on his return here in 1949 he devoted most of his time to civic and governmental organizations. Mr. Mitchell was graduated from M.I.T. in 1903. He went to Brazil as an Electrical Engineer and in 1911 joined the General Electric Company in San Francisco. The next year he went to the Alabama Power Company in Birmingham. He moved to Atlanta in 1927 when he began his connection with Georgia Power as vice-president and general manager. He leaves a daughter and five sons.

An historical M.I.T. brochure note of 1895 reads: "The oldest, the most thoroughly appointed and largest Architectural School in the country is the Department of Architecture at the Massachusetts Institute of Technology in Boston. It is in the charge of Professor Francis W. Chandler with a corps of ten professors, assistants and special lecturers. The regular course consists of four years study. Special students are admitted after satisfying the Faculty by examination or otherwise that they are proficient in the preparatory studies required to pursue to advantage the special work chosen. For two and one-half years the students are continually engaged upon architectural design under the charge of Professors Desfradelle and Letang, who modelled its instruction very largely upon that of the Ecole des Beaux Arts."—John J. A. Nolan, Secretary, 13 Linden Ave., Somerville; Augustus H. Eustis, Treasurer, 131 State St., Boston.

'04

The last edition of these notes was written in May for inclusion in the July issue of the Review. The first item of interest since that date is Alumni Day in

June. The attendance was small but those of us who attended enjoyed the festivities. Those listed by the Alumni office are: Mr. and Mrs. Holcombe, Mr. and Mrs. Hayward, Katherine (Dexter) McCormick, E. F. Rockwood, E. H. Russell, and Arthur D. Smith. A man sitting at the luncheon table and supposedly a member of the '03 group was later reported to be Harrison Whitney '04 of Portland, Ore. His name does not appear on the official list but we apologize to him for not tying him in with our group. We didn't see Mrs. McCormick at any of the festivities but if the Alumni record is correct we are sorry she didn't join us.

Currier Lang has sent us several letters he received in response to his April presidential letter to members of the class. Two were received in time for the July notes but two others came later. One was from **George, Arlo, Bates**, who for many years previous to retirement was with the Anaconda Copper Company at Great Falls, Mont. A quote from Arlo's letter to Currier follows:

"You will no doubt be surprised to see my name at the bottom of this letter. You probably do not remember me, but I was a member of the short-lived 1904 baseball team, the smallest member. I think that you were captain and third baseman. The only other member I can place was Willie Chandler. The two games in which I participated were not historic, but I distinctly remember making one hit—a clean single to left field. I still follow baseball pretty closely via Mutual's Game of the Day. I am rooting for Pittsburgh in the National League. As for the American, I am sort of neutral. —I don't care who beats the Yanks. To relieve your mind, I have sent in my mite to the Fund. It will not help the average amount per man, but it may help in the percentage column of participants. My chief reason for writing you is to tell you that you are practically a neighbor to my only son, Robert C. Bates and his family, who live in New Canaan."

The second letter to Currier was from **L. O. Hopkins**, of Nashville, Tenn., a portion of which follows: "After reading your letter, I took it to the office and dictated a damned good letter, mellow to the 3rd degree. However, after it was typed, decided it looked like propaganda and high-pressure advertising, so toned it down to the following. I was a special '04 man at M.I.T.; received my degree from the University of Maine. Since leaving M.I.T., have not had personal contact with any of the '04 men, Course I, except **Arthur Holbrook**, **John Roland**, and **Frank Severy**, but often think of the many others, their acts, etc. Those thoughts sometimes made worthwhile a day of many concerns, demands for decisions, etc., such as the engineer is often confronted with in his work. Have had personal contact in years past with Professor **Spofford**, '93, and we gradually became close friends, although we did not see eye to eye when I was a student. Prof. **Breed**, '97, and I also became staunch friends. It was with sorrow that I learned of his passing on, as I had hoped to be able to visit him at his Camden, Maine, home. My life's work has been,

and still is, associated with bridges, heavy machinery, and foundations. First with the American Bridge Company, then with a firm of consulting engineers for 12 years, then with the Nashville Bridge Company as Chief Engineer for thirty years, and for the last five years my own business as consulting engineer under the firm name of L. O. Hopkins and Sons, Consulting Engineers, specializing in bridges, fixed and movable, especially in the Hopkins Type (patented) Bascule. Mrs. Hopkins (Ada Varney from Bangor) and I have spent 52 happy years together. Have two sons, a daughter, and eight grandchildren, so consider myself most fortunate. Can still eat corn on the cob and cannot comb my hair with a towel. Am a Fellow A.S.C.E., Baptist, A.T.O., Republican, Mason and Shriner. Any '04 and '05 Course I men passing through Nashville will be welcome guests at my home."

It may interest some of you to know that Camp Hayward for Girls, owned and operated by the Quincy, Mass., Y.M.C.A. at Sandwich on Cape Cod, and previously mentioned in these notes, was opened on schedule, July 2, and officially dedicated on July 24. The first season has been successful and the campers very enthusiastic.

It is with deep regret that we have an unusually long list of classmates who have gone to the great beyond. Some of these deaths date from some months or even years past and came to the attention of the Alumni Office in their preparation of correct lists for the forthcoming publication of the Register of Former Students. The most recent is that of **Guy Palmer**, on July 16, who, with his wife, attended our fiftieth and fifty-fifth reunions, and was present at several mid-winter gatherings in Florida. He was retired regional engineer of construction and maintenance of way for the B.&O. railroad, operating out of Chicago, and was active in various railroad organizations. He was always interested in class affairs and will be greatly missed. Our sympathy goes to his widow Louise, his son Robert, his daughter Ruth and the two grandsons. **Maynard Holcombe** writes of Guy as follows: "You probably have heard of the death of Guy Palmer on July 16 from shock. It was a shock to us to learn of it on our return from our trip to Cambridge and Washington last week. Guy went through the Winchester Grammar School and High School with me and we have kept in close touch ever since. He was a really dependable guy and I shall miss him a great deal." Maynard also mentions that he saw the Currier Lungs and **Charlie Haynes** on his way home from Alumni Day.

The Boston papers announce the death of **Fred Pirie** at Lynn, Mass. on August 27. Fred entered M.I.T. with our class and will be remembered as an accomplished pianist and a good friend. He finished with '05 and is listed there by the Alumni Office but '04 mourns his passing none the less.

George Harrington, well known to Course III men, died May 3, at Chicago. He was president of the Chicago, Wilmington and Franklin Coal Company,

and was a highly respected mining engineer, especially in coal production. . . . **George Briggs**, Course IV, whose death is reported as of June 1955, in Boston, will be remembered as major of our freshman battalion. . . . The following deaths reported from the Alumni Office were accompanied by no details: **Chauncy Clements**, New Haven, Conn., no date; **Rutherford Rogers, X**, Youngstown, Ohio, in 1958; **Henry Pitts, IV**, Providence, R. I., Dec. 30, 1958; **John Spargo VI**, Ogden, Utah, July 25, 1959; **Lewis Howard, I**, Tappan, N. Y., Dec., 1959; **Gordon Proudfoot, VI**, Chicago, Ill., Feb. 27, 1960; **Jeremiah Donovan, VI**, Randolph, Mass., May 22, 1960. This represents a sad shrinkage in our roster and is a reminder that we are really getting along in years.

To end on a more cheerful note, we are glad to report that **Bob Sosman** has acquired another medal. This time it is the John Jepson Medal given by the American Ceramic Society for scientific, technical and engineering achievements in the ceramic field.—Carle R. Hayward, Secretary, Room 35-304, M.I.T.; Eugene H. Russell, Treasurer, 82 Devonshire St., Boston.

'05

Wequasset Inn at East Harwich, Mass., proved, on June 10, 11 and 12, to be an ideal place for our 55th reunion. The weather on Saturday was not too good, but on Friday afternoon and Sunday it was warm and sunny. The accommodations in private apartments close to the dining room, with all modern equipment were very fine, and the food was excellent. Present were Frank and May Chesterman, Prince and Ethel Crowell, Bert and Alice Files, Lovell and May Parker, Bill and Peg Ball, Charlie and Effie Smart, Al and Emily Prescott, Henry Buff and sister Alice and a guest (Mrs. Florence Fay), Doc Lewis, Hun Kenway, Wallace Taylor, Walter Eichler, John Damon, Gib Tower (Elizabeth was attending her 50th at Wellesley), Bob McLean, and Ruth and I. Ed and Isa Barrier were terribly disappointed at being unable to attend; Ed had to re-enter the Cape Cod Hospital because of a slight relapse following an abdominal operation. However, Ruth and I called on them in Barnstable on our return to Boston and found Ed feeling much improved.

On Saturday evening **John Damon** entertained us with colored slides and an informal talk about his five years in Korea as Economic Co-ordinator of the International Corporation Administration. All of us were much impressed with the wonderful job and John's personal sacrifice in his attempt to help the U.S.A. get a little bit for our investment in this merciful effort. Just as we were about to break up and leave for Boston, we discovered that that day was the 50th anniversary of the **Smarts'** wedding—too late for a mass recognition, but we did arrange for a corsage for Mrs. Smart on Alumni Day and a boutonniere for Charlie. Incidentally Charlie, who has been manufactur-

ing surveyor's instruments all of his life has been collecting data nationally regarding old-time surveying instruments. I suspect he is readying himself to write a book on the subject. Anyone who knows of exhibits or other specimens could help Charlie by writing him about it.

Of the fellows attending the reunion, Doc Lewis, Hub Kenway, Charlie Smart, Lovell Parker and Henry Buff are still in active business, and seemed in excellent health, as did also Chesterman, Files, Ball, Prescott, Taylor, Eichler, Tower, McLean, and Damon. Incidentally, McLean reached his 80th birthday in September. You'd never know it—and thanks, Bob, for a wonderful job as Class Agent. While we are passing out thanks, many should go to Peg and **Bill Ball** as co-chairmen of the reunion. However, Peg regused to participate in the "bundling game" as they did many years ago at Old Lyme. Anyone remember that?

On Alumni Day at Cambridge those present were Court and Elizabeth Babcock; Frank and May Chesterman; Len and Beatrice Cronkhite; Andy Fisher, wife and grand-son Andrew 4th, also his guest, Charles Stern, who was hoping to enter M.I.T. in September; the Helpers and Nyes; Charlie and Effie Smart; Henry and Mildred Stevenson; Balkam; Charlesworth; Files; Joslin; McLean; Wallace Taylor; Tower; Buff; Damon; and Ruth and I. Our total attendance at the luncheon was at least twice that of any class from 1901-1909.

During the early summer **Ralph Hadley's** widow Grace, with her daughter and two children called on us in Sandwich, N. H. Grace seemed in good health, resolute in spirit, and wanted to be remembered to all her friends in '05. Early in August, Elizabeth and **Gib Tower**, on a tour to see a granddaughter in camp, called on us.

The rest of the news must be a chronicle of deaths: **Abraham Silverman, III**, passed away on Nov. 2, 1955. . . . **Daniel P. Pousland, VI**, died in his old home town of Salem, Mass., sometime in 1959. . . . **Milton L. Rubel, III**, passed away on March 23, 1960; **George Wm. Scott, XIII**, at Dedham, Mass. on May 11, 1960; and **Elbridge G. Allen, I**, at Escondido, Calif., on Jan. 7, 1960. Although I have tried to get obituaries from local newspapers or the immediate families I have been unsuccessful on the above.

Thomas E. Jewett, I, died at Silver Springs, Md., on May 27, 1960. Perhaps **Bertrand Johnson** can get us a story on his later years. . . . **Waldso Turner, VI**, died at Detroit, Mich., June 17, 1960. Since I received a wire from Helen in time I was able to send a floral tribute for the funeral. Waldso had been in near-retirement for several years, leaving the business in the hands of his son. The Turners spent their time between Detroit, Vero Beach, Fla., and their summer home in northern Michigan.

Harold G. Hixon, III, died at his home in Depue, Ill., on July 2, 1960. Through his son, David L. Hixon, M.I.T. 1941, who is with the Simplex Wire & Cable Co. of Cambridge (**Charlie Bogg's** old concern), we learn that since his father's retirement in 1948, he had continued to

live in Depue, spending his winters in Corpus Christi, Texas. He left his wife, two sons and three grandchildren. In the company house-organ of the New Jersey Zinc Co. of September, 1948 we find the following tribute:

"On June 30th Harold Garfield Hixon retired as Superintendent of the Depue Plant after 37 years of service with the company, the last 27 at the Illinois operation. He was graduated from Massachusetts Institute of Technology in 1906 as a mining engineer. He was employed in 1911 at Iola, Kansas, and shortly thereafter assumed the superintendency. He had previous experience in the zinc industry with the old United Zinc & Chemical Co., which then operated plants at Iola, Kansas, and Springfield, Ill. From the responsibilities at Iola he rose to be general superintendent of the Collinsville, Okla., gas and Iola, Kansas, plants and in 1918 to be assistant general manager of Western operations stationed at Chicago. This brought him in contact with broader aspects of the business and in 1921 he went to Depue, then in the trough of the 1920 postwar depression. During his tenure there he saw through improvements in the horizontal furnace practice, the increase in flotation concentrate tonnage and the application of sintering, the expansion of the sulfide pigment plant, the recovery of values from residues, the vertical furnace development, and the War II refinery plant, the advent of natural gas, reminiscent of the days in the Southwest, all leading to a gradual improvement of the Depue operations and hence the community. We two have been long and intimately associated with Harold Hixon. We know and respect him as a faithful employee and a sound citizen; as a man of keen perception in metallurgy and its mechanics and economics, with a sense of what makes the wheels move and what makes them stop; with an interest in people and their well-being, but without ostentation; with a broad sense of fair play and an ability to say no at the right time; with no time for fan-fare and finally with what is perhaps his outstanding characteristic—an unflinching sincerity at all times." This issue shows a picture, taken about 1904 of a group of S.A.E. members, and I recognize Boggs, Hixon, Segar and Houck.

Fred A. Pirie, II, died in Lynn, Mass., on August 27, 1960. Before I left Boston I used to call at Fritz's office, which he visited for half a day each week to "keep his hand in." He was always the same happy, effervescent fellow we remembered at M.I.T. Remember the team of Pirie and **Killion**, who entertained us at some of our early class meetings, Fritz at the keyboard and Louis sitting on top playing and singing ad lib all the popular songs of the day? Who remembers? This clipping from the Boston Herald of Aug. 28 tells us some of his life in the interim: "Fred A. Pirie, 78, of 215 Nahant Rd., Nahant, a Lynn contractor, died yesterday at the Lynn Hospital following a brief illness. Born in Aberdeen, Scotland, he had resided in Nahant for the past 50 years, and was a former member of the Nahant School Committee, a past vice president of the Bayshore Boy

Scout Council, and a trustee of the Nahant Public Library. He was a member of the Scots' Charitable Society of Boston, an honorary member of the Massachusetts Institute of Technology Alumni Association, and was associated for many years with the J. P. Wilson & Son contracting firm in Nahant. He leaves his wife, Jessie; a son, William C., of Penacook, N. H.; a brother, Robert H., of Coral Gables, Fla.; and two grandchildren."

Since reporting **Bob Folsom's** death I have received the following newspaper obituary: "Robert M. Folsom of 56 Oak Ridge Rd., died at the Peter Bent Brigham Hospital on May 10 at the age of 76. A native of Boston, he had lived in Reading for many years. Prior to his retirement in 1952, Mr. Folsom had been vice-president of the Eastern Gas and Fuel Associates, having been with that company for 47 years and with its predecessor. He was also president of two subsidiary companies, N. E. Coke and Mystic Iron Works. Surviving are his wife, Mrs. Hattie (Skillen) Folsom; a son, Charles E. Folsom of Antwerp, N. Y.; a daughter, Mrs. Mary F. Hutchins of Delmar, N. Y.; eight grandchildren; and a brother, Rufus C. Folsom of Hingham. Services were held at the Edgerley and Bessom Funeral Home, Friday, May 13 at two o'clock; Dr. Paul E. Sheldon, the officiating minister. Interment was in Forest Glen."

Just as I wrote these words I learned of the death of **Willis F. ("Dan") Harrington** on September 7, 1960. Details in next issue.

Changes of address: **Norman Lombard**, 620 N.W. 34th St., Fort Lauderdale, Fla.; **Marshall G. Meriam**, Penny Farms, Fla.—Fred W. Goldthwait, Secretary and Treasurer, Box 32, Center Sandwich, N. H.; **Gilbert S. Tower**, Assistant Secretary and Treasurer, 35 No. Main St., Cohasset, Mass.

'06

We're off on another round of contacts, to wind up in a blaze of glory in June celebrating our 55th and the centennial of the Institute. More about those events during the next few months, and meanwhile loosen up with your ideas and suggestions, please.

Hope you all had a memorable summer. Marion and I did, with short visits to Connecticut, Cape Cod, Cape Ann, the Maine coast, and the Berkshire hills around Great Barrington. On June 13 most of the regulars showed up for the Alumni Day doings, in part or in toto. There were the Hinckleys; the Hoefers; the Coeys with a granddaughter, being enroute to Squirrel Island; Walter Davol and Bill Abbott; Jim, Marion, and yours truly; also Colby Dill, X, and his wife, who were warmly welcomed at the luncheon when I had a chance to chat with them. It was good to see him after these many years and I expect to cover his activities in the December notes.

We missed VP and Class Agent **Sherm Chase** and Bertha, as he was in

Newton-Wellesley Hospital for a major operation about that time. I saw him before and after the operation, from which he made an unusually rapid, and very satisfactory, recovery and has long since resumed his normal routine, with limitations. We are all acquiring those limitations, common in our age bracket, and some are serious. . . . **Will Farley, I**, was hospitalized briefly last spring but I believe has kept his small farm under cultivation in Manomet. . . . **Spencer Cutting, V**, wrote to Jim in June from Casa Grande, Arizona, that he had sufficiently recovered from a stroke to be home and get out in the yard. Spencer was with us the first two years, coming in from Winchester.

During the summer I received a clue as to the whereabouts of the Traveling Hoefers, in the form of a crate-like box from Alaska bearing the label, "This is the fish I promised to send you." In it there was indeed a fish—a tin one about four inches long! Alaska has sure been a mecca for tourists the past few summers. . . . In July a couple of classmates had "Letters to the Editor" in the Boston *Herald*. One was from **C. Eugene Fogg MD** (Brig. Gen. MC Ret.) from Portland, Maine, commenting on one of Holmes Alexander's columns captioned "Time to Cry—God Save Us." Doc agreed that the Democratic convention didn't uphold the principles of democracy and so a more appropriate name should be coined for that party. The other letter, from **Sam Ware**, whose daughter Martha has been a judge for several years, complained of a condition that is all too common on the streets in our towns these days; excessive speed. Sam said that 47 home owners had petitioned for posted speed signs on his street (Rte. 58) and apparently were given the brush-off. . . . There was a wedding, too, in July when Major **Harry V. Fletcher, II**, married Mary Linton Deni in Philadelphia. Harry retired some years ago from U.S. Army Engineers and their address is 4646 Larchwood Ave., Philadelphia, 43. . . . In August Jim and I went up to Plaistow, N. H. to see **Charles Kasson, VI**, who, as he puts it, "is living an out-door life," on the small part he now owns of the hundred acre farm he acquired some 25 years ago, near the Massachusetts line. . . . **Mike Gibbons, VI**, is now Sir Michael J. Gibbons KCSG. Jim received a formal invitation, with Mike's card enclosed, to attend the ceremony when 18 laymen of the Archdiocese of Cincinnati were invested as Knights Commander of Saint Gregory, in Dayton on August 31. Mike has long been active in his church and certainly deserves the recognition that has come to him.

Make a note of these address changes: **John W. Anderson, II**, Whisconier Hill, Brookfield Center, Conn.; **Dean Roland P. Davis, I**, 333 Demain Ave., Morgantown, W. Va.; **Frederic E. Earle, II**, 931 Westcott St., Syracuse 10, N. Y.; **Frederick B. Guest, XIII**, Indian Acres, Newfane, Vt.; **Frederick W. Hinds, XIII**, 486 Pleasant St., Athol, Mass.; **Abraham L. Lampie, I**, 2003 Commonwealth Ave., Brighton 35, Mass.; **E. Kent Lawrence**, I, 3003 N. Charles St., Homewood Apt.

2Q, Baltimore, Md.; **Charles F. Willis, III**, 332 East Monte Vista Rd., Phoenix, Ariz. One address has an important addition, as **Bill Furer, IV**, now puts FAIA after it. Congrats Bill. . . . We regret to report two death about which we learned only recently: **Sidney Howard George, I**, died on May 13, 1959, and **William Waterman Gaylord, II**, on Nov. 20, 1959. Their careers will be reported on later. As requested by the Review, because of change in printer, I have tried to keep class notes terse.—Edward B. Rowe, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

At Alumni Day, June 13, 1960, the Class was represented by President and Mrs. **Don Robbins**, Mr. and Mrs. **Ralph Hudson**, **Bill Coffin**, **Louis Freedman**, and your Secretary with his wife. It was a most enjoyable day, but many of our classmates who have attended in previous years were greatly missed. Several of the men telephoned me at the last minute to say they could not come.

In adjoining columns on the obituary page of the *Boston Herald* for June 30 were the notices of the death of **Beebe Hosmer** and **Chet Vose**. Both of these men had been active in attending class gatherings. Beebe was at our last reunion in 1959. He had only missed three reunions since graduation. Chet had attended eight reunions through the 45th, after which illness prevented any further attendance. **Bob Rand** represented our class at the Hosmer funeral in Concord. Following are two paragraphs from the eulogy given at the funeral, which certainly characterize the Beebe Hosmer we, of the '07 Class, knew so well:

"He served this town well through the years. He served his country well. He, in his garden, was an example to us all. He loved his family, though at times his family wondered, for in serious matters he would stand for no fooling. These last years when his body could no longer keep up with his spirit, his moments of irritation came from his impatience with his increasing limitations. He was for so many years seemingly tireless that to find himself limited was almost more than he could bear.

"What so many failed to perceive was his trained mind, the mind of an engineer, hidden most of the time by this man who preferred to be thought a countryman. He loved this town as you soon discovered if your criticisms of it seemed to him unfair. With his spirit there has gone something distinctive and characteristic, of that nature and substance which has made New England stand out in the life of America."

I received a very appreciative note from Mrs. Vose in reply to the letter of sympathy I sent to her in the name of the class. I appreciated the notes from several of the class members, sending clippings about these two men.

Seymour Egan wrote me, on June 25, about the serious illness that **Don Russ** was experiencing; and it was only two

days later I received word of his death at the New England Sanitarium. Many of the class will recall that Don was very active prior to and during World War I as Superintendent of the Gelatin Department of Eastman Kodak Co., Rochester, N. Y. Don retired some years ago, and he and Mrs. Russ were living with their married daughter in her home in Reading.

Lawrence C. Hampton was a Course III man who moved to California, where he conducted a real estate business. Don Robbins received notice of his death on April 4, 1960. Another '07 man whom we corresponded with, and frequently heard from, was **John Donaldson**, also of Course III. He had been confined to the Bethany Home, Alexandria, Minn., for a number of years, and his death on May 22, 1960, was not unexpected.

The Alumni Association has sent me notices of the following deaths of '07 men. These were all non-associates and were connected with '07 only for a short period of time. **Chester L. Howe**, Little Compton, R. I., died July 28, 1959; **Henry P. Hoyt**, Fort Fairfield, Maine, died July 29, 1952; **Ernest T. Woodworth**, Marlboro, Vt., passed away but we have no record of the exact date; **James Tyndall**, Medway, Mass., died March 24, 1944, according to information from his widow; **James R. Vedder**, Syracuse, N. Y., died September 2, 1959; **Henry T. Vogelsberg**, of Waveland, Miss., passed away on April 8, 1960; **Arthur W. Blake**, Portland, Maine, died on June 16, 1957; and **Maurice E. Wyner**, formerly of Brighton, Mass., passed away June 9, 1958.

As of August 22, our active mailing list of '07 contains 139 names. . . . An interesting letter from **Jim Garratt** gave a change of his home address from Nutley, N. J. to 337 Montclair Ave., Newark 4, N. J. Jim is still active on construction work for the Division of Water Supply, Department of Public Works, for the City of Newark. . . . Changes of address have been sent to me as follows: **Roland H. Willcomb**, Route 1, Box 398, Silverdale, Wash.; **Erskine P. Noyes**, 4 Kelly Rd., Falmouth Foreside, Maine; **Robert C. Albro**, 24 Ventura St., Springfield 8, Mass.; **J. Ellis Doucette**, 10 Byrne Ave., Nabbassett, Mass.; **Andrew N. Rebori**, 6 E. Scott St., Chicago 10, Ill.; Vice Adm. **Emory S. Land**, 1710 "H" St., N.W., Washington 6, D. C.; Miss **Bertha I. Barker**, 196 Grove St., Belmont 78, Mass. . . . I have had several letters and cards from **Henry Martin** and a letter from "**Tucky**" **Noyes**.

Mrs. Diana de Filippi, Editor of the Class Notes of the Review, has been a most understanding person to work with and has given the Class Secretaries much needed help each month. I, personally, shall miss her notes and telephone calls, as she is retiring to the full-time profession of being a housewife. As the Review is also to have a new printer this fall, these notes are being sent in early and do not contain news beyond August 22.—**Phil Walker**, Secretary and Treasurer, 18 Summit St., Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland St., Newtonville 60, Mass.

'08

We held our 52d reunion June 10 to 12 at The Melrose Inn, Harwich Port, on the Cape. This was our fourth visit there, so we felt quite at home. As in the past, the Beach Ho was our headquarters. The weather was kind to us, although a little cool. The following classmates checked in: **Bunny Ames**, **Bill Booth**, **Nick Carter**, **Ray Drake**, **Leo Ellis**, **George Freethy**, **Karl Kennison**, **Harry Lord**, **Howard Luther**, **Henry Sewell**, **Charlie Steese**, **Frank Towle**, and **Joe Wattles**. We were favored by the following guests: **Mesdames Ames**, **Belcher**, **Drake**, **Ellis**, **Free-thy**, **Kennison**, **Sewell**, **Steese**, **Towle**, and **Wattles**. Quite a few arrived in time for lunch, and most of us were on hand for dinner. After dinner we adjourned to the lounge at the Beach Ho, where **Karl Kennison** showed some fine Kodachromes which he had taken in the city of Cartagena, Colombia, South America. He visited there as a consultant on a water supply and system for the city. The pictures were most interesting and Karl's comments on the history, climate, and customs of the country added greatly to our enjoyment. As befits septuagenarians, we adjourned about 10:30 P.M. and so to bed.

No special activities had been planned for Saturday so everyone did what he wished. The ladies, of course, visited the shops in the village and vicinity, and our lone golfer, **Howard Luther**, visited his club, Eastward Ho, in Chatham. After dinner on Saturday night, we stayed on in the dining room. Lacking **Dick Collins** at the piano, we had to depend on canned music. We had been able to get some records from M.I.T. of the glee club, in familiar Tech songs, also records of old time popular songs. **Joe Wattles** showed a fine Esso color sound movie, "Fabulous Florida", which was greatly enjoyed, to wind up the evening.

We had hoped that Margaret Collins would join us, but as her son-in-law, Dr. Cook of the M.I.T. Faculty was celebrating his 10th reunion, grandma was elected to baby-sit. We also greatly missed Marie and **Jimmie Burch** who have never missed an '08 reunion. Business commitments prevented their coming east at this time.

Sunday most of us started for Boston after lunch, feeling that our 52d reunion was worth while, and looking forward to a 53d next June. Monday was Alumni Day in Cambridge. Present from '08 at the lunch or banquet were: **Bill Booth**; **Nick Carter**; **Henry** and **Mrs. Damon**; **Leo Loeb** and guest, **Howard Luther**; **Miles Sampson**; **Frank Towle**; and **Joe Wattles**. It was a perfect June day, so the lunch was held in the Great Court and the cocktail hour at Briggs Field, where the sun was really hot and one appreciated the cold drinks. Following the banquet in Rockwell cage, we moved on to Kresge Auditorium for a program of classical ballet by the **André Eglevsky Ballet**, a fitting climax for a wonderful Alumni Day.

Jimmie Burch has retired as president of Farley and Loetscher Mfg. Co. in Dubuque, Iowa, but can now devote more time to the Dubuque Bank and Trust Co., of which he is president. Jimmie is very proud of his grandson Rusty, who is 17 and president of his senior high school class. He was captain of pages at the Republican Convention in Chicago last summer, and was able to meet Governor Nelson Rockefeller, Senator Barry Goldwater, Douglas Edwards, and others.

The grim reaper has been rather busy with '08 men of late. I am sorry to report the deaths of: **John F. Leary** of Newburyport in June 1958; **W. Armour Johnston** of New York City in July 1958; **Irvine S. Taylor** of Roy, N.M. in May 1959; **Edward C. Brown** of Providence, R.I. in July 1959; **John A. Remon** of Washington, D.C. in May 1960; **John A. Kydd** of Englewood, N.J. in June 1960; **Harold E. Weeks** of Brooklyn, N.Y. in June 1960.

Had a pleasant visit with **Frank Shannon** and his wife, of Tuscon, Ariz. last summer. They were on their periodic trip to New England. . . . Our first dinner meeting of the class for the 1960-61 season will be held at the M.I.T. Faculty Club in Cambridge on Wednesday, Nov. 9 to 6 P.M. Why not plan to come and see the old gang? Ladies are invited. . . . Don't forget to do your duty to the Alumni Fund. It's a short season this year.—**H. Lester Carter**, Secretary, 14 Roslyn Rd., Waban 68, Mass.; **Leslie B. Ellis**, Treasurer and Assistant Secretary, 230 Melrose St., Melrose 76, Mass.

'09

This is the beginning of another year, our 52d since graduation. The years do "come and go" and far too swiftly. It seems just a few short weeks ago when so many of us met at the Institute on Alumni Day, our first meeting after our Fiftieth. There were 23 of us there, including the lad George Bowers, I; Howard, I, and Ruth Congon; John II, and Margaret Davis; Chet, VI, and Muriel Dawes; Tom Desmond, I; Francis Loud, VI; Lewis Nisbet, XI; Herbert Palmer, VIII; Joe Parker, I; Gardiner Perry, VI; Julius Serra, I; Art, I, and Betty Shaw; Lawrence Shaw, V; Henry, II, and Madge Spencer; Albert Thornley, II; George, II, and Marcia Wallis; John Willard, II. Alice Desmond was in town but unfortunately arthritis, the same ailment that prevented her taking part in the fiftieth anniversary activities, also prevented her attending Alumni Day. The Class is sorry to learn that she has become so handicapped and hopes that she will improve and that we may see her again at future class meetings.

The luncheon, instead of being located in the smaller DuPont Court, as in former years, was out in the Great Court under large tents. Having passed our fiftieth, we now have attained the privileges of the "older statesmen" and have reserved for us a long dining table adjacent to the head table with waitress service.

After the luncheon President Stratton told of the recent accomplishments of the Institute such as its new teaching methods and research adapted to meet the requirements of the present nuclear and space age, pointing out that \$66,000,000 were needed to enable M.I.T. to meet its future responsibilities and maintain its role as a leading technical school. Dr. Killian, Chairman of the Corporation, accepted generous gifts from the classes of 1935, 1920, and 1910.

At five o'clock there was a social and cocktail hour just outside the Kresge Auditorium followed by the dinner in the Rockwell Cage at which a brief Alumni Meeting was held. We then adjourned to the Kresge Auditorium where we were entertained by ballet, the company having been brought here especially for the Boston Arts Festival.

Tom Desmond, who retired as a New York State Senator and is a life member of the Corporation, is now devoting a large part of his time to helping plan the drive for the \$66,000,000 fund. . . . **Joe Parker**, who retired some time ago from Jackson and Moreland, is now with Hoyle, Doran and Berry, Architects, with an office on Boylston Street. He is engaged on such projects as the new Prudential Center in Boston, a new building for the Telephone Company in Springfield, Mass., and the new building program of Boston University. . . . Although **Julius Serra** also retired a short time ago, he is still active as a consultant on bridges, subways and terminals in which fields he has become known as an expert. . . . **Albert Thornley**, who for several years was secretary to the Episcopal Diocese in Rhode Island, has retired but still spends some time on title work for the Diocese.

In the Boston Herald of July 12, there was a letter from **Florence Luscomb, IV**, in which she included the content of a letter written to a friend by a young Christian non-communist Japanese woman who had lived in the U.S. for four years. She repudiated the thought which so many Americans have that the demonstrations against the Kishi government were influenced by communists. There was a majority demanding the dissolution of the Kishi cabinet, including 38 per cent of his own liberal party and hundreds of university professors and many Protestant church members. The writer of the letter adds, "It is a really pity that U.S. is supporting this corrupted party . . ."

Following are two letters, one to **Francis Loud** from **Lester King, IV**, relative to **Herbert Wertheim** who had come to visit America from Australia, and the other, Herbert Wertheim's letter to **Art Shaw**. "Art Shaw sent me a copy of his letter replying to one from Herbert Wertheim inquiring about the whereabouts of his classmates Moses, Stiebel, Lange, Gram and me. I was the only one left! Wertheim was in New York with Mrs. Wertheim from July 10 to 15 and Mrs. King and I went to the city on the 13 for luncheon at Top Of The Sixes and sightseeing in the afternoon, with much reminiscing sandwiched in. Wertheim looked just as he did in 1905-1907 except that the St. Botolph St. meal ticket of

those days did not give him quite the build-up of today! I only wish there had been time to get him out to Rowayton for further reminiscences and a real visit. Wertheim had a tough break at the time of the depression and lost the family piano manufacturing business built up on the experience he gained after M.I.T., in that era when I saw him in 1908, when he piloted me around Europe for five weeks. He has been an accountant in Melbourne since then and only recently retired. The present visit is part of a trip around the world which will be concluded late in August via boat from Vancouver. His wife died of a heart attack several years ago and the present Mrs. Wertheim with him on this trip was one of her good friends. His disappointment at not seeing more of his old pals was only offset by his enthusiasm over our day together with all the pleasant memories it aroused. We wish it might have been longer. He had left his home for sale and I hope to receive a new address when he returns. I also urged him to write Art Shaw directly with news which I may have overlooked. Possibly I have written you that I retired as of March first, upon conclusion of the addition to Riverside Church in New York City, where I had represented the Boston architects for five years much as I had done on the original building thirty years ago. I am enjoying gardening, sailing and leisure as never before, although I miss the contacts of commuting and of the architectural offices with which I have been associated. Louise and I live in a little old (somewhere over a hundred years) house in a former oyster village bordering on Long Island Sound. Our daughter and her husband and two daughters come over from New Jersey for a swim or some fishing, and we hope we can remain right here. Sincerely, **Lester Hazen King.**"

"Dear Arthur: My intentions had been to write to you very much earlier than today to thank you for yours of June 16 last. However this travelling takes up a lot of time and energy and I therefore hope that you will overlook my tardiness. It certainly was very nice to receive your letter. At the same time I was extremely sorry to learn of the passing of so many of my former M.I.T. chums. Lester King, whom I was more than delighted to greet again, was good enough to come to New York with his wife to meet us at the Abbey Hotel. After acting as very kind hosts at an excellent luncheon they showed us some of the many New York sights. My wife and I were both sorry when the time came for them to return to Rowayton. My stay in N. Y. was really too limited; I had to visit relatives there whom I had not seen for many years. Thus it was impossible for me to try to get in touch with you for the purpose of trying to arrange a meeting between us. I am honestly sorry about this but can only hope that you will understand. After leaving New York we went to Washington, Buffalo, Toronto, Banff, and Vancouver. There we boarded the *Orestes* and tomorrow morning (Aug. 3) we will arrive at Honolulu, after having called at 'Frisco and Los Angeles. On the 21 we expect to be back in Melbourne. My tem-

porary address will be c/o A. N. Z. Bank, 351 Collins Street, Melbourne, as to date having sold our home. I do not know where we will settle. Not a very nice prospect but the journey just about finished has been a wonderful experience and one that we will remember and never regret. Should you by any chance come to Australia, I hope you will get in touch with me and that we may see one another. Kindest regards from Herbert Wertheim." We are all glad to receive such detailed news of a classmate who lives so far away as Australia.

From the Alumni Office we have received notices of the deaths of several classmates. **Frank S. James, VI**, died on Nov. 16, 1957, at Ormond Beach, Fla. Frank attended the Institute only during his third year. Our records show that earlier he lived in Pittsburgh, then joined the American Tel & Tel Co. in New York in 1928. In 1950 he moved to Ormond Beach, where he lived until his death. . . . **Michael Terry, III**, died on July 12, 1959 at Flint, Mich. He was born in Springfield, Mass., and attended the University of Pennsylvania before entering the Institute. Except for a short period in which he lived at St. Cloud, Minn., he spent most of his life in Flint. . . . **Frank R. Schell, VI**, died on Dec. 5, 1959, at Glen Cove, N. Y. Our records show that since leaving the Institute he lived in or near New York City until 1951 when he moved to Washington, D. C. In 1953 he came to Glen Cove, his last address.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis**, Wenham, Mass.; **Francis M. Loud**, 351 Commercial St., Weymouth 88, Mass.

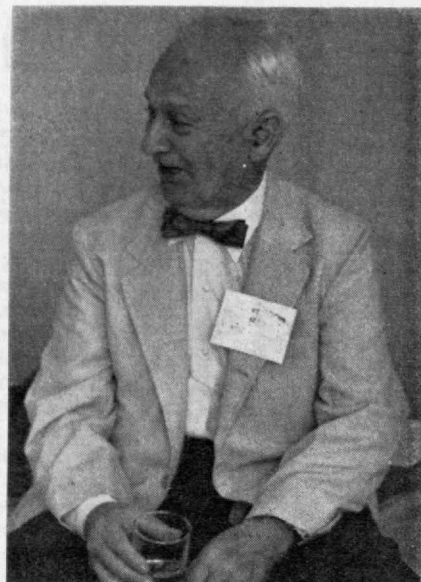
'10

A short prelude to the review of our Fiftieth Reunion is in order. **Jack Babcock**, our Class Agent and Reunion Chairman, had all reservations and arrangements for the Reunion signed, sealed and delivered last January. It appeared then that the Reunion Committee's job would be routine. Cape Cod was

to be the location and the Chatham Bars Inn, the place. Then, sometime in February or March, the committee was startled by an ultimatum from a group of classmates that they would not attend any reunion held on Cape Cod. This committee, heeding them, started anew. Dormitories on the M.I.T. Campus, Andover Inn, New Ocean House, and the Continental and Commander Hotels in Cambridge, were considered but none seemed to fill the bill. Then **Hal Manson** suggested the Charter House Motel on Route 128 in Waltham. Every member of the local committee visited the place, ate there, and asked questions. No one except Hal Manson was fully sold on this place. Finally the committee voted for the Charter House, with some of the members voting with crossed fingers. Now that the reunion is over, the committee is grateful to the obstructionists who would not go to Cape Cod and Hal Manson who started an innovation which received nothing but praise from all who attended the reunion.

The reunion became a reality in the robing room for those attending the graduation exercises on the morning of June 10. Here members of the class were struggling into gowns and trying on caps, while at the same time greeting classmates whom they had not seen for many years. If it had not been for the attendant who was assigned to see that caps and gowns were properly in place, the members of 1910 would not have been ready to join the graduation procession. **Frank Bell** was class marshall and directed us to our seats on the platform. As my hearing is poor, I could not follow the speeches. So I had time to reminisce and my mind turned to our last undergraduate class meeting in 1910 where caps and gowns for graduation were under discussion and several classmates vowed they would appear in coveralls if the class voted in favor of them. I wondered if any of those dissenters were attired in cap and gown on the platform, and if they remembered their objection to formalities.

There was little time for greeting all classmates present until the gathering in the Great Court for the luncheon to which the class had been invited by



H. S. Cleverdon, '10 Secretary

Dr. Stratton. The luncheon was a most enjoyable affair, a perfect day, good food, and renewing memories of 54 years. It is customary at the graduation day luncheon for the fiftieth reunion class to have a member address the new graduates. **Dud Clapp** had been selected to perform this function, and what a job Dud did! He broke all traditions where oratory was expected with sage advice to the young. Dud declaimed in original verse, giving a scientific history of the past fifty years, M.I.T.'s growth, and ending up with advice to the graduates as follows:

Now your President asked me to give you advice;

Half a century's worth in a neat little slice,

Though I fear we old fogies don't cut any ice,

Our fond reminiscences bore so.

Just allow me to warn you—your studies aren't through.

What you've learned is not all and won't always be true.

Keep alert and receptive to new points of view

For LIFE is like Tech, only more so.



The 50th reunion class last spring on the terrace by the swimming pool at the Charter House Motel on Route 128.

It was the outstanding event of the luncheon program.

After the luncheon the trip to the Charter House in Waltham started. Transportation was provided for those who did not come by auto, and upon arrival all were greeted by Jack Babcock and assigned to rooms. The afternoon passed quickly in becoming settled in our rooms and greeting members who had not attended the graduation exercises. At dinner that evening the results of the balloting for class officers for the next five years were reported. Unanimously elected were **George Lunt**, President; **Ralph Horne**, Vice President, Jack Babcock, Class Agent and Reunion Chairman and **Herb Cleverdon**, Secretary. The outstanding event of the evening was **Larry Hemmenway's** gift to each attending classmate of a copy of *When M.I.T. was Boston Tech* by Prof. Samuel C. Prescott. It is a book every alumnus should have. It gives the early history of M.I.T. in a most interesting manner. Everyone appreciated Larry's thoughtfulness.

Saturday was a day of general get together; three hardy members went swimming in the pool, **Frank Bell**, **Larry Hemmenway** and **Bob Burnett**. Otherwise it was a day of complete relaxation and renewing old friendships.

The big event of the day was the banquet and cocktail hour. Dr. and Mrs. Stratton were present for both events. The cocktail hour was held on the swimming pool terrace and here the picture of the gathering was taken.

Hal Manson presided at the banquet. His introductory remarks were that the program would be informal and so it proved to be. Dr. Stratton was casually requested to speak to us and he appeared to enjoy fully the informality of the occasion and his talk was fully appreciated by all present. **Dud Clapp** again entertained us by reciting several parodies of current popular songs of 50 years ago on the selection of a new site for M.I.T. The ladies were presented with a remembrance souvenir as selected by **Meta Horne** and **Frances Cleverdon**.

On Sunday a few of the classmates returned home, others took auto trips to various points of interest, while others again congregated in parties. A shore dinner was enjoyed in the early afternoon. At this time we were honored by the presence of **Harold (Lobby) Lobdell** and his wife. No 1910 Reunion would be complete without **Lobby** being present for at least a short time. The reunion at the Charter House began to break up after the shore dinner only to be resumed at the Alumni Day festivities on Monday. Practically all those attending the Class Reunion attended the cocktail hour, the banquet, and the ballet in the Kresge Auditorium. The letters I have received this summer from various classmates who attended the reunion have praised the Reunion Committee and each commented on the wonderful time he had. Plans are being considered for a special issue of *MITTEN '50* to be sent out to every member of the Class before Christmas.

The following are the names of those attending all or part of the Reunion: **John Ahlers** and two sons; **Harold** and **Jessie**

Akerley; **Ken Armstrong**; **Fred Arnolt**; **Jack Babcock**; **Hiram** and **Lucy Beebe**; **Frank Bell**; **Carroll** and **Anna Benton**; **V. T. H. Bien**; **Hal** and **Alice Billings**; **Roy** and **Gladys Briggs**; **Bob** and **Agnes Burnett**; **Larry Chapman**; **Dud** and **Helen Clapp**; **Herb** and **Frances Cleverdon**; **Jim Cox**; **Allen** and **Carrie Curtis**; **Art** and **Mary Curtis**; **Luther** and **Anne Davis**; **Fred** and **Elizabeth Dewey**; **Bill Drew** and wife; **Andy** and **Rae Fabens**; **Herb** and **Lillie Fowler**; **Allen** and **Barbara Gould**; **John Gray** and Son; **Al** and **Janet Hague**; **Russ Hastings**; **Larry Hemmenway**; **Gordon** and **Marjorie Holbrook**; **Jack Holbrook**; **Ralph** and **Meta Horne**; **Al** and **Clara Huckings**; **George Humphrey**; **Ed** and **Christine Kiely**; **Ed Kollen**; **Phil Laurson**; **Fred Lufkin**; **George Lunt** and wife; **Haven McCrillis**; **George** and **Lois Magee**; **George** and **Lucille Maglott**; **Hal** and **Helen Manson**; **Murray** and **Eva Mellish**; **Ed** and **Pauline Newhall**; **Bill** and **Annette O'Hearn**; **Ernest Patch**; **Henry** and **Florence Perley**; **Sterling Pool**; **Erford** and **Muriel Potter**; **Ludwig** and **Rebecca Rosenstein**; **Carl** and **Irene Sittenger**; **Walt** and **Romalda Spalding**; **Griffiths Taite** and daughter; **Paul Thompson**; **Jim** and **Elsie Tripp**; **Etta Turnbull** (Mrs. M. J.); **Jack** and **Carrie Tuttle**; **Charles Wallour**; **Chester** and **Helen Wilson**.

I am sorry to announce the death of **Arthur Foote** on August 10, 1960, and **V. T. H. Bien** on August 19, 1960. **Bieny** attended the reunion and was very active, meeting one and all and taking pictures. I had a letter from him in July stating he was making up a compilation of pictures of those attending the reunion and their photographs as taken from the 1910 Portfolio. The following is from *The Sunday Star*, of August 21: "**V. T. H. Bien**, 73, prominent local architect, died Friday in Suburban Hospital after suffering a heart attack. A graduate of M.I.T., Mr. Bien was active in the organization of several local professional associations for architects. He organized the Washington Metropolitan section of the Maryland Society of Architects, serving two years as the organization's president and later as a member of the board of directors. He participated in the organization of the Maryland division, Washington Metropolitan section, of the Maryland Chapter of the American Institute of Architects. He served successively as the group's secretary, vice president and president, as well as director of the parent District Chapter of the AIA. He was a member of the American Institute of Architects for 18 years. He was president of the Takoma Park Historical Society and was appointed to the Advisory Planning Commission.

I have just received a letter from Mrs. **Richard O. Fernandez** telling me that **Dick** passed away September 1, after a long illness.—**Herbert S. Cleverdon**, Secretary, 120 Tremont St., Boston, Mass.

'11

A final report from Chairman **Roy MacPherson** gave the following data on the **Dennie Memorial Fund**: There were

102 contributors giving \$1,852, to which was added bank interest so that the net total available was \$1,879.07. Of this total \$1,642 was expended for the metal grill overlaying the Blue Glass, and \$180 for the glass. The balance of \$57.07 was turned over to St. Andrew's Episcopal Church in Framingham towards their expense for installing the Blue Glass and their further assurance that they would provide and install a suitable memorial plate. **Sallie Denison** and family and several classmates were present at the dedication. The following letter was subsequently received from **Sallie**: "Dear 1911 Classmates. I have just come from the service of dedication of the beautiful window. My heart is very full of love and thanks to all of you who made this memorial window possible. It is an everlasting tribute to **Dennie** from those who loved him, and the appreciation of his family is very great. Sincerely, **Sallie**." Classmates and friends who were unable to attend the ceremony are very welcome to visit and see this tribute to **Dennie**.

Classmate **Carl S. Eli**, XI, connected with Northeastern University, Boston, ever since his graduation from M.I.T., many years as President and now Chancellor and President Emeritus, received citations last April for distinguished service to the university. Special citations were for "eminent attainment in the field of co-operative education" and as one whose "leadership throughout half a century inspired courage and fidelity in his colleagues and helped them to build an ever finer institution of learning."

Sixteen classmates and four wives, **Mrs. Alter**, **Mrs. Herlihy**, **Mrs. Richmond**, and **Mrs. Stewart**, were present at the noon luncheon and other daytime events on Alumni Day, June 13. Nine classmates, including eight of the above, and **Mrs. Stewart**, were present at the evening banquet.

Notices of the death of five classmates were received in August: **Sterling B. Dyer**, II, Belmont, Mass., June 19, 1958; **Lee R. McMillan**, IV, New Orleans, La., in 1956; **Thomas B. O'Hearn**, I, Lowell, Mass., November 28, 1957; **Harrison A. Smith**, III, Menasha, Wis., April 7, 1960; **Charles R. Stover**, VI, La Grange, Ill., July, 1959. Our late but sincere sympathy to their relatives. Your secretary would appreciate it if they would send him details of the life and activities of the deceased.

The following address changes have been received, effective last summer: **Harold E. Babbitt**, XI, U.S.O.M.-Minn., APO 301, San Francisco, Calif.; **Austin W. Brooks**, VI, 59 Robinson Rd., Falmouth, Mass.; **Antonio C. Clavell**, V, Mayaguez Terrace, Mayaguez, Puerto Rico; **Luis de Florez**, II, 200 Sylvan Ave., Rt. 9-W, Englewood Cliffs, N. J.; **Herbert P. Joyce**, V, 78A Hawley St., Brockton, Mass.; **George C. Kenney**, I, 18 E 68th St., New York, N. Y.; **Edward H. Kruckemeyer**, IV, 354 Compton Hills Drive, Cincinnati 15, Ohio; **William O. Whitney**, 969 Lake Drive, Dunedin, Fla.—**Henry F. Dolliver**, Secretary, 10 Bellevue Rd., Belmont 78, Mass.; **John A. Herlihy**, Assistant Secretary, 588 Riverside Ave., Medford 55, Mass.

Word has just reached me of the death on October 2, 1957, of **Robert O. Beard-sley, VI**. No further details of his recent doings are available, as he has been out of touch with the Alumni Office for several years. . . . **Leslie M. Huggins, II**, of 706 North "O" St., Lake Worth, Fla. passed away on December 11, 1959. Huggins retired several years ago to Florida. . . . **Andrew F. Allen, II**, passed away suddenly at his home, 418 Wellington Rd., Delmar, N. Y. on June 1, 1960. His wife has been an invalid for several years and is still in very poor health. . . . **William J. Maguire, IV**, Superintendent of Public Buildings, Providence, R. I. passed away on July 1, 1960. Maguire was appointed WPA director in Rhode Island in 1936, and later when regional offices were consolidated became the senior engineer for the New York Regional Office. In 1940 he returned to Rhode Island as superintendent of Public Buildings in Providence. He has served as state chairman of the American Public Works Association and as a member of the Society of Professional Engineers and the Turks Head Club. He is survived by his wife Sarah and son William J. Maguire, both of Providence. Also surviving him is a daughter, and five grandchildren.

The following were at M.I.T. Alumni Day in Cambridge: Bill Collins, Albion Davis, Harris Dexter, Harold Manning, Mr. and Mrs. Jerome C. Hunsaker, Mr. Jonathan A. Noyes, Mr. and Mrs. Louis S. Walsh, and your Secretary and Mrs. Shepard. Fred Busby was also there for lunch. He still heads up the M.I.T. employee's Federal Credit Union. He expects to retire in December.

F. Nelson Breed, IV, writes from Wilton, Conn., where he states he is having a fair amount of fun working on plans for houses, churches, apartments, etc. He spent the month of January, 1959, in Jamaica with Mrs. Breed, working on plans for a fair-sized house for a client. He returned to Jamaica for the month of January this year, and stayed at the new house, which he says came out very well. He fills in his spare time by trout fishing, swimming, and landscape painting. In the fall, he shoots ducks and pheasants, and in the winter he skis, skates, and cuts down trees on his homestead.

Mr. and Mrs. **Jonathan Noyes** have spent a very pleasant summer at Flye Point, Brooklin, Maine. They enjoyed a visit with Mr. and Mrs. **Charlie Cary** at their Plum Island, Narragansett Bay, home. John described the Cary home as a little bit of heaven dropped into the sea off the Maine coast. It has forest, rocks, and the sea, all rolled into one. John and Caroline are starting off soon on a four month's cruise on the *Caronia* to the Mediterranean and Black Sea, but expect to be home in Texas for Christmas. We are expecting letters regarding their trip. —Frederick J. Shepard, Jr., Secretary, 31 Chestnut St., Boston 8, Mass.; John Noyes, Assistant Secretary, 3326 Shorecrest Drive, Dallas 35, Texas.

Another Alumni Day with its fair, warm weather has passed. Those who attended were Affel, Beola, Chatfield, Crocker, Hamilton, Peaslee, Harold Wilkins, Zecha, your secretary, and several wives. This was the year following our 45th reunion and it is sad that two who were present a year ago have died during the year. **Charlie Fiske** had expected to attend but had to pass it up. His sciatica is still troubling him so that he was not able to attend the Second Century Fund Conference held this September. Naturally it is not easy to enter and leave Cuba, but our classmate **Pablo Beola** from Havana was able to attend this Alumni Day and optimistically hopes to be present again next year.

Our lightning expert and classmate, **Gilbert Wagner**, who attended our reunion last year, writes that he needs more space. Has anyone in Stafford, Conn., any industrial space to suggest to him?

Don Crowell, who has been president of the Crowell Tube Co., in Concord, Mass., has sold the company to Nuclear Metals, Inc., also of Concord. The company was started by Don's father. He will continue as a consultant, and member of the board of directors.

As it has often been said, one of the Fourteeners' popular attitudes is retirement. **Louis Currier** is one of our members most recently retired. Currier has been with the Geological Survey in Washington and has had a very distinguished career in geological surveys.

One who has not retired is **Bob Townsend**, just appointed consultant at the General Chemical Research Laboratory of Allied Chemical's General Chemical Division in Morristown, N. J.

In this connection your secretary would like to mention again that the editors request that these columns be brief. Often, however, there is considerable additional data in my files, so please write if you desire more information.

In a recent Review I wrote a bit about **Thorn Dickinson's** land travels. Since he retired seven years ago, he has walked over 6,000 miles, and in the last year, 110 miles up, and the same amount down. Among other things, he has cut a new trail a mile long, and re-cut two miles, most of which had been nearly obliterated. We hope Thorn will give us a story of his tramping when we have a meeting in New York.

Eugenio Garza-Sada has won the Distinguished Executive of the Year citation of the Ejecutivos de Ventas de Mexico. It sounds like a most interesting story, but Lobdell has not given us the translation as yet.

Your secretary had an interesting trip this summer to Iceland and Russia, among other places. Unfortunately there is not time before the Review deadline to write much about the trip, but an account will be included next month.

It is with regret that we report the death of several classmates. . . . A former class secretary, **Cornelius J. Callahan**, died June 4. He had been in a nursing

home on Staten Island for a long period. Con was born in North Andover, then moved to Lawrence. He prepared for the Institute at Phillips Andover Academy. He was never married. During World War I he was an Ensign and served as a constructor of aircraft in Buffalo. . . . **Elmer L. Hathaway** died on May 15, in Marceline, Mo. He prepared at Newburyport, Mass. He leaves his wife, Mrs. Marie (Ketels) Hathaway, and a daughter. His business life was spent with the Santa Fe Railroad. . . . On Oct. 14, 1959, **William A. Etherton** died. He came from Stillwater, Okla., and spent his later life in Kirkwood, Mo. . . . **Joseph A. Deckop** died in Buffalo on June 13. Unfortunately we have little information about him. He was, however, married to Irene Hoffmeyer in 1915 and has a son, Raymon. . . . **Ralph E. Merry** is reported to have lived in Somerville and died in 1948. He transferred to the Institute from Tufts College and our card shows that he was married to Mary Breedon in 1917. Our late genial classmate **Fred Sauer**, did his thesis with Ralph. . . . Two other men who have been reported as deceased are **Harry G. Matthews** and **James M. Henderson**. The former had served as an Army Captain. He lived in Hollywood, Calif., and is reported to have died in an automobile accident in 1939. Henderson came from Everett, and had lived in various places in suburban Boston.—Charles P. Fiske, President, Cold Spring Farm, Bath, Maine; Harold B. Richmond, Secretary, 100 Memorial Drive, Cambridge 42, Mass.; Herman A. Affel, Assistant Secretary and Class Agent, R.F.D. 2, Oakland, Maine.

What a Reunion! What a Class! Sixty classmates and four guests made our Forty-fifth at Snow Inn, Harwichport, Mass., an outstanding and enjoyable success. The Committee of Wink Howlett, Pirate Rooney, Al Sampson and Max Woythaler with Barbara Thomas deserves our applause and thanks for its ready, willing, and friendly help and co-operation in working so hard to assure us this good time. And my hearty appreciation of the generosity of you men attending for your liberal support in making it all a financial success! The weekend at the Cape was climaxed by a rousing Class Cocktail Party at the M.I.T. Faculty Club, giving the ladies and guests of the Class their yearly chance to be together. What a Class—it was hard to distinguish mothers from daughters! At the Reunion at the Cape: Phil Alger, Larry Bailey, D. B. Baker, Sam Berke, Ken Boynton, Bill Brackett, Wayne Bradley, Maurice Brandt, Ted Brown, Whit Brown, Evers Burtner, Orton Camp, E. J. Casselman, Jerry Coldwell, Ralph Curtis, Henry Daley, Jack Dalton, Alan Dana, Carl Dunn, Sam Eisenburg, Ralph Hart, Otto Hilbert, Gabe Hilton, Wink Howlett, Don Hooper, Ben Hurvitz, John Hyneman, Larry Landers, Azel Mack, Vince Macconi, Hank Marion, Lovel Mason, Archie Morrison, Harry Murphy, Ben Neal, Char-

lie Norton, Johnny O'Brien, Gil Peakes, Wally Pike, Larry Quirk, Pirate Rooney, Chet Runels, Sol Schneider, Frank Scully, Ted Spear, Bill Spencer, Ed Sullivan, Bur Swain, Speed Swift, Jim Tobey, Fred Vogel, Ray Walcott, Virgil Wardwell, Fred Waters, Easty Weaver, Herb Whitcomb, Ed Whiting, Chris Wolfe, and Louie, "Be Sharp" Young. Guests: PFC Gerry Rooney, USMC (Pirate's son); Peter and Arthur Murphy (Harry's sons) and Jim Hoey, President, 1943 Class. Last-minute cancellations were from Alton Cook, Allen Abrams, Joe Livermore, Reggie Foster and Pop Wood.

We sent a wire: "All the best from your Classmates, we miss you here," to Mary Plummer Rice on the Coast and our sick list of Alfred Hall, Herb Anderson, Reggie Foster, Clive Lacy, Max Woythaler and Al Sampson. We were indeed sorry they could not be with us, but we are sending each a reunion picture. Virginia (Thomas) Johnston wired from Princeton: "Love and kisses to all the Class. Hope to be with you next year." Tower Piza's sister, Mrs. Margaret Crane wrote: "I had thought frequently about the big Do that's in store for the Class of '15 and had every intention of sending my good wishes before the fateful date. There's no use saying how incredible it seems that this can be your FORTY-FIFTH year. At this stage the years simply telescope into one another and it's impossible to keep track of them. It was dear of you to send us the invitation to the Boston Cocktail Party. I'll be very much with you in spirit. And do have a wonderful time at Harwichport. Give my regards to any of the boys who would remember Tower. And when you sit around with glasses in hand, remember I'm wishing you the very best. Remember, too, Tower's little story—that Old Alf—'e aint chainged a bit! 'E never will! Fondest to you and Fran—from us both." Nice to hear from these old friends.

Our attendance of 60 Classmates representing 19 per cent of our entire mailing list and 50 per cent of our active mailing list was a remarkable example of the splendid spirit and camaraderie that makes 1915 so outstanding. Long-distance men were: Gabe Hilton, Clearwater, Fla., John Hyneman, Miami; Ken Boynton, Biltmore, N.C.; Carl Dunn, Chicago; Bill Spencer, Baltimore; Fred Vogel, Pittsburgh; Herm Morse, Akron; Bridge Casselman, Harrisonburg, Va. We're slowing down from those gay old days—athletic activities were limited to one golf foursome, Wink Howlett, Vince Maconi, Archie Morrison and Ben Neal. We never knew the results as they all stopped at Wink's nearby house in South Yarmouth for the nineteenth hole.

Ralph Curtis presented us all with automatic pencils appropriately marked for our Forty-fifth and he hoped they would encourage the gang to write me now and then. See that you do—many thanks, Ralph. With no organized program of activities, we spent the time pleasantly sitting around, visiting, talking, reminiscing nostalgically. Through the hum and strum of all this, there ran a continuous, quiet and serious chess game with Phil Alger, Easty Weaver, Fred Vogel, Mau-

rice Brandt, and Otto Hilbert battling it out serenely.

The 1945 Class was having its Fifteenth Reunion at the same time—a pleasant and agreeable young group with which we had no conflict at any time. They marvelled at the spirit and organization of our Class. I am sure they would join with us in heartily recommending Snow Inn to any one who wants to visit the Cape. Saturday noon, Snow Inn served us all a delicious shore dinner with all the fixin's. With everyone just about gastronomically saturated, for dinner that night the Inn came up with a table of endless hors d'oeuvres hot and cold, canapes, oysters and clams on the shell, topped off with a man's size sirloin steak dinner, followed by strawberry shortcake. Good eatin! This was the highlight. We paid a silent tribute to the memory of the 197 classmates who have passed on. May their souls rest in eternal peace. We promised no speeches, but we were pleased and excited to hear **Jack Dalton** describe financial affairs at M.I.T. and the approaching Second Century Fund. Then **Ben Neal** brought us up to date on our own "Fiftieth Fund." It is Ben's understanding that your contribution to our "Fiftieth Fund" will be credited to the Class in the Second Century Fund. Ben made a strong, stirring, impressive sales appeal with the gratifying result that a number of fellows later gave him some generous donations. But, it's not a question of a few large givers; he wants a large number of givers. To encourage donations from many classmates, Ben announced a spectacular (anonymous) offer to raise every contribution of less than \$100, up to \$100, for the next five years. Whoever is doing this for Ben is certainly a swell guy. Let's give him (or them) a "regular M.I.T. cheer," and send your check to Ben. Let this be your inspiration: How about it for good old 1915?

Representing the United States Marine Corps from Annapolis, PFC Gerry Rooney (the Pirate's son) was a picture in his dress blues. This smart uniform (and young man) was a fascination for the college girl waitresses, and our spies told us Gerry had his pick of dates that night, and well into the morning. "Oh, for the life of a soldier!" **Harry Murphy's** boys Arthur and Peter were welcome guests, enjoyed by everyone. We had invited Bill Sheils and David Hamburg, who unfortunately could not make it. **Wayne Bradley** offered his summer hotel, "Forty Acres Inn" at Pike, N.H. for our Fiftieth. Why not give Wayne some business and go up there for a stay? To climax the Saturday night banquet, that unpredictable **Louie Young**, always up to something, made a riotous presentation of a pair of lace-trimmed pastel blue shorts to **George Rooney**. No one knows just why, so the old Pirate may have some explaining to do later. Sunday afternoon a large group of us had a sail on the Inn's 47-foot schooner "Laura S." Cool liquids served on board made this a very pleasant trip. Sartorial splendor for the Reunion was high lighted by **Bill Spencer** in full Scottish regalia of his families' ancestral plaids, from kilts up and down.

And the perennial young boy **Speed Swift** arrived in a red and chromium-trimmed, top-down, convertible, with a musical horn. To match this, Swiftie wore a flaming red shirt and red beret. He was a flashy bit of scenery, described by his local Concord, N.H., *Daily Monitor*: "Ex-Sen. Herbert Swift of New London is a 71-year-old youngster who still responds to the bell like an old fire-horse, even after a flock of operations. He has now purchased a new Cadillac, with enough red trimmings to frighten the Ku Klux Klan, to help celebrate the 45th reunion of his 1915 class at Massachusetts Institute of Technology. Next weekend, Swift plans to chug his chariot to Harwichport, on Cape Cod, where he will live it up, for this party. A couple of coronaries, eye operations, and whatnots, have failed to dim Swift's zest for living. His example in fortitude is worth sharing."

Upon our return to Cambridge on Monday, our cocktail party was a happy time for everyone. Al and Barbara did a swell job on this, surely establishing it as an annual "must" for our class to get together. We were pleased to have as guests, Mr. and Mrs. Thomas P. Pitre of the M.I.T. Faculty. Some went on to the Alumni Dinner later, but that fancy ballet was a little too much for most of us, so several gathered with Fran and me at our 100 Memorial Drive apartment. Present at the Alumni Dinner were: Philip L. Alger; William E. Ash and Mrs. A. A. Pritchard; Lawrence H. Bailey; Mr. and Mrs. Kenneth K. Boynton; H. Whittemore Brown; Everett S. Coldwell; Alton A. Cook; Mr. and Mrs. Henry F. Daley; Marshall B. Dalton; Mr. and Mrs. Carl T. Dunn; Gabe Hilton; Donald O. Hooper; Mr. and Mrs. Benjamin Hurvitz; Mr. and Mrs. Azel W. Mack; Mr. and Mrs. Henry L. Marion; Archibald S. Morrison; Mr. and Mrs. Herman E. Morse; James B. Neal; Mr. and Mrs. Waldo F. Pike; Mr. and Mrs. George T. Rooney; Solomon Schneider; William B. Spencer; Ed and Anne Sullivan; Mr. and Mrs. Wilbur Swain; Herbert D. Swift; Mr. and Mrs. Raymond H. Walcott; Mr. and Mrs. Carl W. Wood; Mr. and Mrs. Louis H. Young; Mr. and Mrs. Warren Cowles; and Mr. and Mrs. Evers Burnter.

Our fellows in Philadelphia have kept in close touch with **Herb Anderson**. **Sol Schneider** and **Henry Daley** have written me several times and it's a pleasure to know that in July, Herb and Alice were in Maine for part of the summer. Henry wrote: "Herb's other eye which has been very weak for 20 years is standing up well. He can read the time on his wrist-watch, watches TV for short periods but does no reading as yet. He is as cheerful as ever and is looking forward to attending the New York dinner next January. He looks fit as the proverbial fiddle. He attends corporation meetings again, but other than that has put business activities aside for the time being." We are all greatly relieved that Herb has successfully recovered from his serious and tragic trouble and wish him all the best for improvement. Next month—more reunion news for you—meantime, "Help Ben."—Azel W. Mack, Class Secretary, 100 Memorial Drive, Cambridge 42, Mass.

Well, there it is—the 44th Reunion come and gone! And now, says **Steve Brophy**, look ahead to the 45th, only seven months away. Held in June at the Chatham Bars Inn with its peaceful surroundings, its excellent cuisine, and its near-by golf course, the 44th had a count of 36. The weather was middling with in-between opportunities for golf on Saturday and a clear blue sky on Sunday. Saturday's schedule included a clambake at noon, a cocktail party in Cottage G at 5:00, the class picture at 7:00, and the banquet from 7:00 on. The Leaches came the greatest distance, from Austin, Texas, while the Burbanks, the Clausens, the Kemps, and the Websters, Cape Codders all, had the shortest travel. Those in attendance included: the Joe Barkers and son Michael Malion, Steve Berke, the Steve Brophys, the Jack Burbanks, the Howard Clausens and son Fred, Harold Dodge, Jim Evans, the Ralph Fletchers, the Bill Leaches, Bob O'Brien—our tried and true honorary member who makes other classes wonder how we keep so young, the Dave Warshaws, the Don Websters, Steve Whitney, the Bob Wilsons, Charlie Woolley and Jack Woods. Looking back, there are a number of items that come to mind: **Bob Wilson's** absorbing account, within due limits, of atomic matters in the world to-day (he was fresh from his new job as Commissioner of the A.E.C.); Cottage G, as 1916 homey headquarters, with posted photos and clippings of noteworthy 1916 items for 1959-60, the oversize 1916 banner, two roaring fireplaces, and the generous selection of "what'll you have" spread all over two tables—no place for a nap; news of **Joe Barker's** new activities heading up standardizing work on data processing; **Howard Claussen** with that healthy tan look that goes with an active member of the Coast Guard Auxiliary; the mystery of delayed-action firecrackers functioning in respectable fireplaces, and the lack of speculation over WHO brings them; **Len Stone** with his two wrist watches, one on each wrist, to permit him to say, "Now, on the other hand!"; **Izzy Richmond** looking fit as a fiddle, coming and going in his own plane; **Bob O'Brien**, with a 35 on his second round of the nine-hole golf course—a 1916 record, until we hear otherwise; **Jim Evans**, the early bird and comfort arranger, who checked steadily to make sure everyone was happy; the aerial bombs that really spoke, even at 11:33 P.M. on Saturday; relaxed pressures at the bridge table by Berke-Wilson-Barker-Stone with comments from the sidelines; the adoption of Dave Peene, '29, for the duration and beyond; **Charlie Woolley** and his second mission at the Cape—attending a 60th wedding anniversary; the top-quality clambake, although it was perforce held indoors; the news that **Dina Coleman** had been visiting the Fletcher quarries only days before the Reunion but that Board affairs at Transylvania College

would keep him from Chatham; the M.I.T. cheer for the youngsters of the Class of 1920 and the generous response; Mrs. Howard Claussen, National Republican Committeewoman of Mass., and her son, right from a state meeting which had chosen the Republican gubernatorial candidate for 1960; **George Pettit's** praise of a telephone operator for locating **Ralph Fletcher** when all he told her was that Ralph lived in southern N. H. and graduated from M.I.T. in 1916; the realization that 1916 has a terrific standard deviation with one Class Baby 47 years old (parents, the **Emory Kemps**) and another Class Baby three years old (parents, the Ralph Fletchers); and, perhaps best of all, just visiting and discussing things old and new in the salt-sea atmosphere of Cape Cod. The 1916 cocktail party on Alumni Day in the Campus Room of the Graduate House in Cambridge included the Joe Barkers, Steve Berke, Van Bush, the Ralph Fletchers, the Percival Goodings, and Rudolph Gruber. Steve Brophy was designated Chairman of the 45th Reunion Committee, and with a special assist from Jim Evans, Steve plans to include on his committee, the rest of the class Executive Committee, namely: Messrs. Barker, Barrett, Binger, Dodge, Fletcher, H. Freeman, Richmond, Whitney, and Wilson.

Among those not present at the 44th but from whom words of assurance or strong expectations have been received relative to the 45th in 1961, are: Wes Blank, Will Brown, L'Roche Bousquet, Japp Carr, Brad Curtis, Dick Fellows, Allen Giles, Howard Hands, Maurice Holland, Moose Jewett, R. M. Kallejian, Al Lovenberg, Dip McClure, Irv McDaniel, Hal Neilson, Arvin Page, Allen Pettee, Harry Smith, Harry Whittemore, William Willetts, Will Wylde, and others.

Irv McDaniel reported in August from Tbilisi, the Capital of Georgia, SSR: "Spending August in Russia—going everywhere, September in Northern France, October in Portugal, then back to Tremolinas in Spain until reunion time." Definite assurance, that!

Allen Pettee is one of those retirees whom "they" just won't leave alone. Last November his special faculties were called back into service and, since then, and until a month before our 45th next June, his address reads, Valencia, Venezuela. He's helping out his old company, General Cable, as Technical Director of a young cable and wire plant. In May he wrote: "It's a nice cool morning in Valencia, nine degrees north of the equator, as I sit in my third floor apartment with opened front, watching a squad of workmen mowing new grass with machetes, in a large open area backed up by a church. Imagine mowing your whole lawn with a sickle. . . (later) . . . The men apparently agreed with me, for they shortly gave up the whole project and will probably be back in December when the rainy season is over. By that time, the coarse monte grass will be six feet tall, too high for any tool except a machete." Apparently Spanish is a must, and Allen expects that by the time they

leave they'll be chattering like magpies. He says this "old-young" country, with the highest per capita income and the highest financial reserves among all South American countries still has no great middle class. There is much encouragement to all kinds of industries (like his) to locate there. He says some things are cheap. Bananas are a penny apiece and bus rides three and three-quarters cents except at night, on Saturday afternoons, Sundays, and during revolutions—then you pay seven and one-half cents. It is very interesting to be in on "the waking up and stabilization of a potentially wealthy country that has rather recently emerged from the feudal system."

We understand that, since reunion time, Mrs. Howard Claussen was given the high honor of being named as one of the 16 Massachusetts Republican Presidential Electors. Our warm congratulations! She had the same honor once before, in 1948.

Jim Evans declares that never (repeat, NEVER!) has any group in his experience responded so completely and so enthusiastically as they did to his letter indicating an opportunity to contribute toward a memento to Ralph Fletcher in the form of a duly inscribed captain's chair of M.I.T. standard style. Ralph's response to all participants included a photograph of the 23-odd persons (note the hyphen between 23 and odd) who attended the dinner in Boston last August.

We are sorry we didn't hear until last June that **Hal Neilson** had a "slight stroke" a year earlier, in June 1959, and had been in bed continuously until last November. Hal said he has improved a lot though he still has to spend about half of his time in bed resting, and at other times, "find almost the slightest thing beyond my doing." He hopes to be with us at the 45th. None will forget the pleasure we had in his absorbing and inimitable accounts of the problems of Southern farming. Get well fast, Hal! We need you in Osterville in June.

Back in mid-summer, **Herb Mendelson** advised that on August 10 he was leaving for England, Greece, and Africa, and expected to be away until the first of October. We hope to get more about this from Herb.

Effective July 1, **Milton Schur** was named vice president for research of the Packaging Division of Olin Mathieson Chemical Corp. He was formerly director of research and development for the division's Ecusta Paper operations in Pisgah Forest, N. C., and will continue to make his headquarters there. In his new post he will co-ordinate the research and development activities of the Ecusta forest products and film operations of the Packaging Division. He will also serve as consultant to the Ecusta research and development department. Milton joined Ecusta in 1944 as research director. He is the originator of the wet-strength principle of paper manufacture and holds several hundred patents. The Packaging Division produces and sells a broad range of materials including kraft paper and board, shipping sacks, grocery

bags, corrugated containers, cartons, cigarette and fine printing papers, Olin Cellophane, Olin Polyethelene, and lumber products.

Flipp Fleming's son Bill, who was at Rutgers University in New Brunswick, N. J. (where your Secretary continues as a Professor in the The Statistics Center in the Graduate School), in June completed a special banking course. This is a 3-year course, two weeks of lectures each year, a problem a month, a thesis, and an oral exam. Congratulations to Flipp The 2nd (really W. H. Fleming, Jr.) who is an assistant cashier with the Republic National Bank of Dallas, Texas.

We regret to report the death of **Willard Crandall** on May 27 in the Hospital for Special Surgery in New York after a long illness. As reported in the Sunday Sun, of Westerly, R. I., "He was a chemist in the Product Development Department of Foster D. Snell, Inc., one of the largest consulting engineering firms in the East. He has been a research engineer in oil, foods, and chemicals, since his graduation from M.I.T. in 1916, and following service in the Chemical Warfare Service in World War I." The New York Times notes, "For 25 years, Mr. Crandall had been chief chemist of the M. Ewing Fox Co., Inc., paint manufacturers. At his death he was with Calkin Bayley, Inc., consultants. Surviving are his widow, Eleanor C.; a daughter, Mrs. Arden C. Flagg; a son, Milton A.; a sister; and three grandchildren." Mrs. Crandall writes: "During his long stay in the hospital, Willard was much cheered by the many letters from his classmates. Please pass along my grateful thanks."

We also regret to report the death of **Tom Little** on August 5 in Belmont. A former Treasurer and Director of Bemis Brothers Bag Co., Tom was associated with the firm more than 40 years before his retirement in 1959. Howard Claussen notes that he and Tom grew up together as kids in Hartford, and followed almost identical careers through the public schools, college, and later in business with Bemis Bag. Tom was for many years a director of the State Street Trust Co., and a member of the Advisory Committee of its successor, the State Street Bank and Trust Co. Tom graduated from Trinity College before coming to Tech. He leaves his widow, Margaret deRonge Little; two sons, Thomas W., Jr. of Groton, and Dennis G. of Belmont; and seven grandchildren.

In mid-May, we were very glad to have word from **Alex Brest** in Jacksonville, Fla., where, as Secretary-Treasurer of the Duval Engineering and Construction Co., he has an active interest in heavy construction—roads, bridges, dredging, and paving. He is also president of the Florida-Georgia Television Co., Channel 12, Jacksonville, which is an NBC and ABC affiliate station. He says they are striving to do their best to give public service to all local non-profit, religious, and public service organizations. As though that weren't enough, he is on the Board of Trustees of Jacksonville University, which was formerly a Junior College and is now a four-year college. He says: "We are striving for

accreditation in 1961, and presently I am engaged in raising an endowment fund of \$3 million. My oldest son, Paul, is a sophomore in Swarthmore College and my youngest son, Peter, is living in New York and attending Riverside Country School. Paul shows an interest in English and music and may dedicate his life to teaching. Peter shows some interest in science and may study for architecture or civil engineering."

Hovey Freeman has a well-written home fire safety booklet that's available for those of you who want copies for your married children or for yourself. The story is non-technical with specific information as to what devices are available and where they may be obtained. Write Hovey, P.O. Box 1485, Providence 1, R. I.

Ralph reports an interesting letter last May from **R. M. Kallejian**. He is secretary of the Hollywood Service Club, is now 71, retires in another year, and hopes to attend the 45th. Two years ago he was chairman of the San Fernando Valley Group and enjoyed mixing with the younger men. It made him feel years younger. He says that as one grows older, responsibilities grow. He has five grandchildren with birthdays, school programs, Boy Scout and Cub Scout exercises, and he attends all of them. He still has his laboratory and sells a stomach remedy he has had since 1920. He also writes a syndicated monthly column for a group of newspapers. A sample column carries the title, "Golden Opportunity for Youth." One daughter is with TWA, one son-in-law is with Douglas Aircraft, and another with American Airlines, all of which may, he hopes, help him to get to the reunion next June.

Harold Mills and his wife completed a three-month automobile trip on July 2. They took 29 days going across to California, 16 of them camping out. One of the objectives of their trip was a more careful exploration of southwest Utah. They traveled to Ensenada, Baja, Calif., with their daughter Joan and son-in-law, of La Jolla, and visited their daughter Nancy in Oakland. On their return, they browsed around high up in Yosemite National Park in the Tuolumne Meadows. From there they went through Tioga Pass in the Sierra Nevadas, up through Idaho, and spent four days in Glacier National Park. They drove a total of 10,455 miles. Should anyone want advice or suggestions regarding roads, etc., both Harold Mills and **Arvin Page** will be more than glad to oblige.

In June, **Dick Berger** advised that he was in the midst of writing new reprint literature on cancer prevention but that the work was not completed or condensed enough.

The 1916 monthly luncheons continue in New York, in the M.I.T. Club of New York headquarters in the Hotel Biltmore. These come on the Thursday following the first Monday, specifically Nov. 10, Dec. 8, and Jan. 5, for the next three. If you live near New York, here's a fine monthly occasion for you; if you live elsewhere and are coming to New York on one of these dates, join the group.

This year, the year of the 45th Re-

union, we hope to have an increase both in the high-percentage-of-1916ers-that-write-in and in the number of items sent in. So . . . write a little, but write often.—Harold F. Dodge, Secretary, 96 Briarcliff Rd., Mountain Lakes, N. J.; Ralph A. Fletcher, President, Box 71, West Chelmsford, Mass.

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The attendance of 1917ers at Alumni Day on June 13 was mainly "regulars:" Carlton C. Adams, Walter and Mrs. Beadle, Kenneth and Mrs. Bell, Raymond and Mrs. Blanchard, Philip and Mrs. Cristal, William and Mrs. Dennen, Stanley Dunning, Walter Gartner, Clarence Holt, Stanley Lane, Lobby and Mrs., John and Mrs. Lunn and son John G., C. Dix and Mrs. Proctor, Ray and Mrs. Stevens, Henry Strout, A. Ed Tuttle, and Walter Whitman. This should form a good nucleus for the 100 to 150 that we hope will plan for the 45th Reunion at Snow Inn on Cape Cod in June of 1962.

Some like to retire at 65 and some don't. **J. Hank Stagg**, who joined the "65 Club" early this year reports the following: "My brother and I just finished buying and moving our Industrial Supply business (Bridgeport, Conn.), into a new building which has ample office space, room for all our supplies, and, most important, generous parking facilities. Moving away from the center of the city was a rather difficult decision to make because the company had been located there since 1872, but now that it has been accomplished, we would not return for any amount of money. But what a job it was to move. I think there are too few of us still performing our daily toils of hard labor. I am glad to know that plans for our 45th Reunion are already under way and I hope to see all my friends there."

Professor **Robert S. Mulliken** is again in the news. As Professor at the University of Chicago, he was presented with the Theodore William Richards Medal at the meeting of the Northeastern Section of the American Chemical Society at Harvard University on May 12. One of Prof. Mulliken's former post-doctoral students made the presentation. He said, in part: "Without question, Professor Mulliken is one of the most deserving scientists ever to have been chosen for the award. The record of Professor Mulliken's contributions is one of extraordinary length, depth, and breadth. The time from his first published scientific contribution to the one he is summarizing for us today (The Interaction of Electron Donors and Acceptors) is no less than four decades, and each one of these is filled with a remarkably long list of contributions—almost 200 in all."

Ozzie Holt retired in July from DuPont's Savannah River Plant, Aiken, S.C. He was employed by DuPont in 1932 and spent much of his service in the field of job evaluation. In recent years, he has been staff specialist for evaluations in the Methods and Standards Department of the company. His friends gave him a re-

tirement party on July 21. Ozzie reports: "My retirement party was a wonderful eventful affair for Dutch (Mrs. Holt) and me. It was a buffet-dance at the Richmond Hotel, Augusta. The Georgian Room was prettily decorated and the entire evening was filled with delightful moments for both of us. The entertainment program centered around 'This is Your Life,' or 'Ozzie Pars the Course in 65.' After we entertain our older grandson, Richard Holt Throner, 14 years of age, from Glendora, Cal. for about a week in Dixieland, and we put him on a bus to Washington, D.C., we will get ready for California. We expect to enjoy the 'Life of Riley' for about two months in Glendora with our daughter Jean's family. We have rented our home here in Aiken for a year to see how we like California as a steady diet for retirement. We leave August 10 for Glendora, to spend a couple of months with grandchildren before looking around seriously for a place to rent or buy." Since our Class History or Class Notes have not heretofore recorded any "inside dope" on Ozzie, the following quotations from the Savannah River "Plant News" of July 29 are of interest: "For the last seven years the Holts have made their home in Aiken. There are three grandchildren, Richard 14, Carol Anne 12, and Steve 7. . . . An influential member of the Holt household is Candy, a well-groomed French poodle they bought as a pup. 'Candy,' Mrs. Holt says, 'is Ozzie's dog, and if you don't believe it you should see her waiting for Ozzie to come home from the plant every day.' Ozzie turns out an unusually tasty chocolate fudge and Candy—whose name is no accident—is usually the first to try a new batch. Candy-making is only one of many hobbies for Ozzie. He has always been interested in amateur theatricals, and in Philadelphia he served on the governing board of the Wyncote Players. He made a hit with Aiken audiences as Dr. Armstrong in the Aiken Community Playhouse presentation of 'Ten Little Indians.' 'I was the next to the last man to go—that is, get killed,' Ozzie related with pride. Ozzie's baritone voice has been heard in many church choirs, and he also appeared in two Gilbert and Sullivan operettas, 'H.M.S. Pinafore,' and 'The Mikado,' presented by the Aiken Players. . . . Genealogy is another of Ozzie's interests. He has served as president of the Holt Association of America, composed of more than 250 Holts."

In April of this year, honors were given to three members of the class, all on the teaching staff of Northeastern University, Boston. In the notes for July we reported the citation presented to **Frederick A. Stearns**. At the same time, **Emil A. Gramstorff**, dean of graduate engineering programs and Professor of Civil Engineering, was cited for 39 years of distinguished service as teacher and administrator. Also, **Alfred J. Ferretti**, Professor of Mechanical Engineering, and chairman of that department, received a citation for 42 years of distinguished teaching at the University.

We have been advised of the following deaths: Professor **Calvin D. Albert** of Cornell University, on Sept. 23, 1959;

Lt. Commander **Ryohei Arisaka**, of Tokyo, Japan (who studied Aeronautical Engineering at M.I.T.), on Jan. 10, 1955; **Harrison H. Atwood**, Course IV, on Nov. 7, 1957; **Stanley W. Hyde**, on May 23, 1960; **Ralph B. Palmer**, Course I, in June, 1957; **Hugh C. Stone**, Course I, July, 1957.

Frank L. Butterworth, owner of the Independent Supply Co., of Marion, Ind., writes: "I very definitely recognize the 65th birthday as the time that I should retire, but I am not so doing. The business is still the same, at the same address, but we have changed our name as of last fall, from Butterfield Company, Inc., to Independent Supply Co."

Ken Bell is another member of the class who keeps busy. The Salem, Mass., *News* reports the following: "Kenneth E. Bell, former vice president and technical director of the A. C. Lawrence Leather Co., has written an 1800-word article on leather and furs to be included in the forthcoming *Encyclopedia of Science and Technology*, being published this fall by McGraw-Hill."

An M.I.T. news release states as follows: "Four faculty members from M.I.T. have arrived in India to conduct a month-long course for 30 business executives of that nation in the Kashmir city of Srinagar. The intensive course in several phases of management will be directed by Prof. **E. P. Brooks**, Dean Emeritus of M.I.T.'s School of Industrial Management."

Commodore **Penn L. Carroll** (U.S.N. Ret.), writes from the Instituto Tecnológico de Monterrey, Monterrey, N.L., Mexico: "Nothing pleases my school here more than to be called the 'M.I.T. of Mexico.' Our head man is a graduate of M.I.T. Nothing would please me more than to have classmates stop by to have a look."

Jack Calabro, of Quincy, sends a postcard from Rome, Italy, indicating that he is spending a part of his vacation there.

John Parsons, who joined the 65 Club this summer, writes: "I am still associated with Calkin & Bayley, Industrial Consultants, and continue to handle projects in my field. Lately, I have been doing some writing for the pulp and paper industry and have a book on a phase of the pulping industry projected for 1962. Last May, I was honored by having my 'profile' published in the TAPPI magazine. It so happens that I have been chairman of the Association's committee on research grants since its inception, 25 years ago. A booklet on 25 years of TAPPI-financed research will be published this fall."

"Last year we lost our church in Rye (N.H.) by fire, and I was appointed chairman of the Building Committee, a job that consumes most of my free time. Four months after the fire, I published a booklet on 'The Churches of Rye, N.H.,' to aid in raising the funds for a new church, which is now being erected. I also work for the Daniel Webster Council, Boy Scouts of America, as district leadership training chairman. These are some of the things which occupy my time, and some days do not contain enough hours." Congratulations, John!

The Class and the Alumni Fund gratefully acknowledge the gift of \$1,000 in memory of **Arthur R. Knight**. Appreciation is also made for the increased support of the class, numerically and dollar-wise, to the Fund.

Rudy Beaver developed a bug while returning from Europe this June. A trip from New York in an ambulance to his home and good care put him on his feet.

Al Lunn has bounced back from a gall bladder operation to face retirement as well as the duties as chairman of the Cambridge Redevelopment Authority. He has an active part in the new building to be built by the Institute and Cabot, Cabot & Forbes.

This is to announce a suspension in closing "smiles" for these class notes unless the secretary should be deluged by letters demanding their resumption. (The supply is not completely exhausted.)—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford 7, Conn.; **Stanley C. Dunning**, Assistant Secretary, 21 Washington Ave., Cambridge 40, Mass.

'18

"The moving finger writes, and having writ moves on," sang the tent maker as he plied his needle. Thus did the moving finger of the Alumni Office write the names of those who attended Class Day last June: **Eli Berman**, **Sam V.** and **Mrs. Chamberlain**, **Yale** and **Mrs. Evelev**, **Saxton W.** and **Mrs. Fletcher**, **Clarence C.** and **Mrs. Fuller**, **Alfred P.** and **Mrs. Grossman**, **Alan F.** **Howard**, **Julian C.** and **Mrs. Howe**, **John W. Kilduff**, **Miss Gretchen A. Palmer**, **Edwin F.** and **Mrs. Rossman**, **Alan B.** and **Mrs. Sanger**, **Max** and **Mrs. Seltzer**, **Carlton E. Tucker**.

Prof. **John Markham's** moving finger enlivened our mail with a minor revelation as follows, "It has been said that the MIT alumni only read their own class notes in the Review. This I find is not so, for what you wrote concerning your visit to the wind tunnel is now being circulated in mimeographed form in our department, and probably elsewhere in the Institute. What you reported I said on the subject of scientific and engineering education is a true reflection of my thoughts but the statement as it appeared in your account is most interesting and is due essentially to your imaginative editing. Needless to say, I am pleased, but I was also delighted to see you again, to talk over old times, and to find that you are happy and busy. Please give my very best regards to Mrs. Magoun." The gentle touch of our John is apparent in the above, but the truth is, I wrote just what he said. The ideas and the words are truly his.

Other moving fingers among the classmates have also moved on. At hand is a list of books, superb, superior, and of great variety, all carrying the name of **Sam Chamberlain**. There are 13 titles still current in the bookstore. . . . The custodian of this column is now writing his sixteenth book as a side line, but of these all but five are out of print. . . . The venerable **George O. Eckwall**, Arch-

deacon of Lowell, contributes to the Boston Herald regularly. . . . Rose Reid, who is living in Manchester Center, Vt., was moved to write: "Thank you for sending the copy of The Technology Review. I shall always keep it. While everything you said about Ken was true, I love you for writing such a wonderful tribute to him. Perhaps it will interest you to know that Ken had an etching of the Rogers Building by Sam Chamberlain which Sam had given him, and while I cannot remember just where it hung in our other homes, it had a prominent place in our home in Palo Alto, Cal. the four years we were there. I now have it hanging where I can look at it often, and what you have said has made me like it more. I was a very lucky person to have had him so close for 35 years, but it was not long enough."

Omar the tent maker also said, "Not one returns to tell us of the Road, which to discover we must travel too." **Harold Fitch** travelled it quite unexpectedly on May 21. During World War I, he belonged to the Army's Chemical Warfare Service. Before coming to Tech he worked in the tool room of the Royal Typewriter Company; years later he became its personnel manager, and later its general supervisor. His last employment was as a mechanical engineer for Pratt and Whitney, from which he retired only two years ago, to watch the far horizon from East Dennis on Cape Cod. I remember him as a Captain in the M.I.T. Iron Battalion who bawled the company out for going on the grass, as he had just done, and saying in the most disarming way, "Only officers can do that." Harold is survived by his father, wife, son, daughter, and three grandchildren. . . . On June 7, Prof. **Albert Haertlein** died in his Harvard University office where he was Associate Dean of Engineering and Applied Physics. He was president of the Boston Society of Civil Engineers, and of the Engineering Societies of New England, as well as vice president and a director of the American Society of Engineers. At a National Engineers Week luncheon in Boston last February, he was given an Award of Merit by the Engineering Societies of New England "in recognition of his long and outstanding service to the engineering profession." Beginning in 1942, he was a member of the Board of Registration of Professional Engineers and Land Surveyors of Mass., serving several times as chairman. He was awarded an honorary degree by Northeastern University, the Desmond Fitzgerald Medal of the Boston Society of Civil Engineers, and the Award of Merit of the National Council of State Boards of Engineering Examiners. After serving with the U.S. Army Corps of Engineers during World War I, he practiced engineering in New York and in Pittsburgh until he joined the Harvard faculty in 1928, and became Gordon McKay Professor of Civil Engineering in 1940. He is survived by his wife, two sons, and eight grandchildren.

On June 19 the great moving finger beckoned **Yale Evelev** to take the road "from whose bourn no traveler returns."

His wife wrote, "He passed away suddenly, less than a week after we attended the M.I.T. reunion on June 13. We had spent a few days in Boston, where he enjoyed being with the usual group that attends the reunions, especially Gretchen Palmer, Sax Fletcher, Bill Wills, Max Seltzer, Nat Krass and Eli Berman. Then we drove to Toronto (I did most of the driving) where we visited a friend who had been ill for a long time. On Sunday morning, June 19, as we were considering leaving for home, he became suddenly ill (he had had a heart condition for ten years) and was gone in 15 minutes, even before the doctor came. Yale had been sending \$100 a year to the Class Fund, and although his will made no mention of it, I'm sure he would have continued until the 50th Reunion." Yale decided early that the security of working for someone else was not for him. In 1920 he started the Keystone Engineering Corporation in Lebanon, Pa. First job, to wire a house. As business grew he opened an office in Reading and then in Philadelphia. After a heart attack in 1950 he retired, turning the business over to his sons. Three times he and his wife travelled through Europe, strolling through art galleries and stumbling on wonderful places to eat. Their last trip was to Hawaii, New Zealand, Australia, and other South Pacific Islands. He never missed a class reunion, was a member of the M.I.T. Club of Philadelphia, and a life member of the A.I.E.E. In addition to his widow, Yale is survived by one daughter, two sons, and six grandchildren. With no further details available news comes of the death of **Charles A. Hunter** on April 30, 1958, and of **Frank A. Brodney**, no date given. We knew him as Frank Brodsky.—F. Alexander Magoun, Secretary, Jeffrey Center, N. H.

'19

E. G. D., Izzie, Paterson, 27 Interlaken Drive, Eastchester, N. Y., recently observed his 40th anniversary of service with the Bell System. He is director of quality assurance at Bell Telephone Laboratories in New York City. Throughout most of his career, Mr. Paterson has specialized in quality assurance activities in connection with all types of telephone apparatus and systems. In 1955 he was named director of the Laboratories' Quality Assurance Department. Mr. Paterson has been extremely active in many community affairs in Eastchester, and in 1952 received the Red Feather Award from the Community Welfare Association. In the spring he was honored with a testimonial dinner on his resignation from the school board after 21 years of service.

Charles A. Chayne, a General Motors vice-president, was one of the hosts at the ninth annual General Motors Conference for Engineering and Science Educators. This conference was held from July 10 to 22 at Warren, Mich. Mr. Chayne is also mentioned in the "General Motors Engineering Journal," as inventor, with John Dolza, of a patent for a charge forming means.

The following members of the Class of 1919 were present at Alumni Day, June 13, 1960: George W. McCreery, Earl P. Stevenson, H. Stanley Weymouth, and Wirt F. Kimball.

A note from **E. E. Saunders**, Capt. U.S.N. Ret., dated June 23, says that he and his wife are convinced that their decision to retire on a mountain side in Asheville, N. C. was wise. They are within one day's drive from each of their three daughters. Their son, Lt. Cdr. E. M. Saunders has been sent to Stanford to get his Ph.D. in physics by the U.S. Navy.

W. R. Osgood writes that he retired June 30 as head of the Department of Mechanics, Rensselaer Polytechnic Institute. This fall he will have a change from administrative work and will be teaching in the Department of Civil Engineering, The Catholic University of America, Washington 17, D. C.

Isidor Slotnik has been appointed general chairman of the annual dinner of Beth Israel Hospital in Boston. He is first vice-president of the hospital, a member of the Executive Committee, and serves on various other committees. He is also actively engaged in numerous community and civic activities.

In May, a new Protestant radio and television recording studio, for the 12 major denominations working together within the Massachusetts Council of Churches, was dedicated in the Cathedral Church of St. Paul, in downtown Boston. The studio was contributed by **Chester C. Stewart**, proprietor of the chemical firm of Boston which bears his name. His professional speciality is chemical mixing processes. The studio is a gift given in honor of his father, the late Frederick J. Stewart.

Through the Alumni Office, we have received word of the death of three members of our class: **Thomas J. Hughes**, Syacuse, N. Y., died Aug. 11, 1955; **Lester V. Chandler**, Hackensack, N. J., died on Dec. 18, 1959; and **Herman Dedichen**, Copenhagen, Denmark, in 1958.

The following changes of address have been received: **Locke L. James**, 12 Woodland Ave., Farmingdale, N. Y.; **Carley H. Paulsen**, North Haven, Maine; **Carl E. Thomas**, 15 Oxford St., Winchester, Mass.; **George F. Magraw**, 20 Alton St., Walpole, Mass. **Alan H. McIntosh**, 600 Dunlieth Circle, Elm Grove, Wis.; **Thomas M. Lloyd**, 3810 47th Ave., Long Island City 1, N. Y.; **Alan G. Richards**, 217 Richland Lane, Madison 5, Wis.; **Harry A. Zimmerman, Jr.**, 250 S. E. Park St., Dania, Fla.; **Ernest F. Schindler**, Nagog Hill Rd., R. F. D. #2, Littleton, Mass.; **Herman A. Herzog**, 18345 Stewart Ave., Homewood, Ill.; **Dr. Brian P. O'Brien**, P. O. Box 117, Pomfret, Conn.—Eugene R. Smoley, Secretary, 30 School Lane, Scarsdale, N. Y.

'20

This has been a big year for the Class of 1920 and we can put it down as a successful one. A detailed report on the 40th reunion will not be needed by those 60-odd classmates who attended

and will only make those who couldn't attend feel bad. Prizes were awarded to **Ed Van Deusen** of Julian, Calif., for coming the farthest distance and to **George Morgan** of Beaumont, Texas, as runner-up. **Herb Fales** arrived at Chatham by private plane, and **Jim Parsons** created a sensation by arriving in his brand new Rolls-Royce which we understand was acquired for this specific purpose. Prizes for class spirit as evidenced by faithful attendance at reunions were awarded to **Flossie Buckland** and **Dorothea Rathbone** and to **Karl Bean**. These were the popular choices. The prize for the one who had changed the least over the years was properly awarded to "**Skeets**" **Brown**. **Frank Bradley** walked off with the prize for the most grandchildren—14. Frank was appointed Chairman of the 1965 Reunion Committee and this selection met with acclaim, as did the conduct of the 40th reunion by Chairman **Buzz Burroughs** and his committee. Booklets commemorating the 40th reunion and giving a brief history of classmates and their accomplishments were distributed at the reunion and mailed to the entire class. If you did not get one, please let me know. There are a few left. I also have some good pictures of reunion groups, some of which were contributed by **Ernie Whitehead**. These are available for inspection at my office as and when you get to Boston.

We had record attendance at the Alumni Day following class reunion. No less than 31 classmates were present, plus 20 wives. Those who attended the luncheon had the pleasure of seeing and hearing **Norrie Abbott** present our reunion year gift to the Alumni Fund (see the July issue of the Review). Great credit is due **Flossie Buckland** and her committee for making this such a good showing on such short notice. We have good reason to be proud of our class and its loyalty to the Institute.

A few contributions to the Class History arrived too late for inclusion in the booklet so these notes can be considered as a supplement.

George Des Marais is a partner in the law office of Borst, Leek & Des Marais, New York City. George was admitted to the bar soon after graduation and is a noted patent attorney. He has a daughter and a son, three granddaughters and a grandson. His son manages the Treadway Motor House in Cambridge. For many years George has served as an honorary secretary and has been actively engaged in the work of the Educational Council, serving as chairman of the Scholarship Committee of Northern New Jersey for several years. He has also served on various committees of the New Jersey M.I.T. Club.

Clint Bond of East Dover, Vt., is retired after a long career with Standard Vacuum Oil Company, ending up as manager of the Calcutta territory. He married Francis W. Shennan and has two granddaughters and a grandson.

Edmond Carey Sullivan of Bay St. Louis, Miss., is now retired after a lifetime of service with the U.S. Public Health Service, Washington, D. C., for which he was Sanitary Engineering Di-

rector. He has authored several papers and reports on various phases of this work, and he has served as District Engineer for the Northeastern States and the Southeastern States, also as Regional Engineer in Atlanta, Ga. Ed married Elizabeth J. Hillery and has a son who is a doctor and is now assistant surgeon of the U.S. Public Health Service, and a daughter who, like his son, graduated from Tulane University.

Mary Almy of Cambridge had a career in architecture, and was also in charge of student employment at Radcliffe. She has been active in the Cambridge Center for Adult Education and in work for the Mt. Auburn Hospital and the Red Cross.

Ernie Whitehead of Worcester is head of E. Whitehead, Inc., contractors and engineers, and has been so engaged ever since graduation. Now a widower, he has two sons and two granddaughters.

Richard Hubbell of Quincy is manager of the Export Department of the United Shoe Machinery Corporation, with which he has been associated ever since 1920. He has traveled extensively in South and Central America. He married Marian Earle, has two sons and a daughter, five grandsons and two granddaughters.

Maj. Gen. L. P. Whitten, U.S.A.F. Ret., Washington, D. C. has had a long and distinguished career with the Air Force, which has taken him to 18 different places to live and to virtually every country in the world. He is now president of the Washington Planning Corporation, specializing in investments and mutual funds. He married Olive Southwick and has no children.

John Nalle of Belmont is a consulting engineer with Foster-Miller Associates, Inc. He has covered a lot of territory in his engineering work, having lived in the West and in Panama as well as in several eastern locations. He married Francis Bain and has no children.

Chuck Reed supplements the rather sketchy and superficial information given in the Class History with assurance that hunting and vacationing in the Caribbean have by no means comprised his principal activities. Chuck has given a great deal of time to the Alumni Association in Cleveland serving on its executive committee, scholarship committee, and as president. He has also been active in the Paint, Varnish & Lacquer Association as director and one-time president locally, and as vice chairman of the National Chemical Coating Section of the Association. He organized the Committee on Educational Cooperation comprising members of the Paint, Varnish & Lacquer Association and the Federation of Production Clubs. This resulted in many scholarships and fellowships as well as courses of instruction in a number of universities. Besides being president of the Forbes Varnish Company, Chuck was a director of the S. C. Waggeman Paint Company of Cleveland, and a director and at one time president of the Mercury Clutch Corporation, Massillon, Ohio. He is a trustee of Clifton Park where he lives, and has been a director and president of the Western Cuyahoga Sportsmen's Association. We always knew that

Chuck had been both busy and successful and are glad to have these confirming evidences.

Archie Cochran has been elected a director of Anaconda Company, world's second largest producer of copper. Archie is president of Anaconda Aluminum Company of Louisville, Kentucky. . . . **Jim Gibson** has been elected assistant treasurer of John Hancock Mutual Life Insurance Company of Boston. He also continues his responsibilities as associate director of the company's City Mortgage Department in charge of commercial loan production. . . . **Ken Clark** has retired as vice president of Johns-Manville Sales Corporation, Building Products Division, and may now be found at his home, Timber Trails, Sherman, Conn. . . . **Al Wason** has recently moved from Dedham to Wellesley, address, 16 Kenilworth Circle. . . . **Foster B. Doane** has left Chicago and heads the F. B. Doane Foundation, Vanda, Texas. . . . He is not to be confused with classmate **Foster P. Doane, Jr.**, Vice President of Bergstrom Paper Company, Neenah, Wisc., who recently acted as moderator of one of the technical sessions of the Pulp Bleaching Conference of the Technical Association of the Pulp & Paper Industry held at Edgewater Beach Hotel, Chicago last June. Foster is a member of the Association's Executive Committee, Pulp Purification Committee, Publication Management, Student Loan Fund, and Joint Textbook Committee. One might surmise that he is a pretty prominent member of the pulp and paper industry.

Capt. Russell S. Hitchcock is now in Sheepscott, Maine. . . . He should not be confused with **Lauren B. Hitchcock** who still holds forth at 60 East 42nd St., New York City. . . . **Valborg Aschehoug** has retired from Stavanger to Oslo, Norway, address, Gulkroken 7, Smestad, Oslo. . . . **John Bates** is in Montreal, address, 3719 Coronet Rd. . . . **John Herron** is in Long Beach, Calif., address, 6737 Belice St. . . . **Gerald Mains** has left Delaware and is in Largo, Fla., address, 1089 Nolan Dr. . . . **Art Littlefield** is now living in Robbinsdale, Minn. . . . **Ned Murdough** has left South Acton, Mass., and is living in Wilmington, Del., address, 134A Thomas Dr. . . . **Ted Sullivan** has left Ridgeway, N. J., and is in West Hollywood, Fla.

Samuel Schenberg was presented the American Society for Metals New York Chapter Educational award for 1960. Connected with the New York City school system since 1922, Sam is director of science for New York City's board of education and is given credit for much of the high caliber of science teaching in New York City public schools. He is first vice president of the Association of Science Supervisors, a new section of the National Science Teachers Association.

Frank Maconi has been elected president of the M.I.T. Club of Framingham, Mass. Frank was instrumental in the founding of the Club and is now serving his second term as president. It has grown to nearly 100 members.

It is with regret and sorrow that we mention the deaths of several classmates. **Alexander Schwohman**, 414 Kennedy St.,

N.W., Washington, D. C., passed away early this year. **Olaus K. Lysholm** of Norway passed away last November. Capt. **Theodore Westfall** of Aptos, Calif. died in July 1959. **Wendell Brown** of Milton, N. H. died over two years ago. —Harold Bugbee, Secretary, 7 Dartmouth St., Winchester, Mass.

'21

A sincere welcome to the official start of our fortieth anniversary year. And what a year it promises to be! For, on April 10, 1961, the Massachusetts Institute of Technology will attain its hundredth birthday. The Centennial Celebration will extend through our own fortieth reunion, scheduled for next June 8 through 11 at the Mayflower Hotel, Manomet, Mass., with its climax at Alumni Day on campus in Cambridge on June 12, 1961. Little did we think, when our sheepskins were presented on June 10, 1921, or when we started the first of this series of class notes in the Review in November, 1921, that the members of the Class of 1921 could be invited via that same series of Review notes to participate in observing the fortieth milestone of our June date on so auspicious an occasion as the centennial of M.I.T. Please don't fail to attend this most important of all reunions and bring your wife and family. You'll be welcomed by a most congenial group who really want to see you again and whom you'll want to see, too. Your family will find a royal treat awaiting them in the company of so many lovely and gracious wives who have had a major part in the success of our interim reunions in Cuba and Mexico. Watch your mail for the class letters which will bring details. Don't miss this once-in-a-lifetime event. Plan now to be there and get your application in early. We are fortunate that **Mel Jenney**, our experienced and successful reunion chairman of the past, is heading this outstanding gathering of the clan. His address is at the bottom of these notes.

Alumni Day last June brought a happy group of 54 members of the class and their families to the Cambridge campus for a full day of scheduled and impromptu sessions. Mel and Anne Jenney were preparing for a European trip. **Dave Woodbury** told us about his fourteenth and fifteenth books, respectively the "Space Book" and the "Ice Age". **Ray St. Laurent** and **Chick Dubé** gave a showing of their excellent color slides of our recent class reunion in Mexico City. **Phil Johnson** was a welcome visitor and the **Kurth** and **Wechsler** couples were warmly greeted as they resumed regular attendance. **Graciela** and **Helier Rodriguez** introduced their nephew, **Manuel Lozano '63**, and his classmate, **Juan Calvo de Dios**. Good weather and a diversified program assured that skillful combination of fun, relaxation and purposeful presentations for which all Alumni Days have been noted. Those present included Mich and Mrs. Bawden, Cac and Mrs. Clarke, Josh Crosby, Ed and Mrs. Delany, Chick and Mrs. Dubé,

Harry and Mrs. Goodman, Bob and Mrs. Haskel, Irv and Mrs. Jakobson, Mel and Mrs. Jenney, Algot Johnson, Phil Johnson, Amby Kerrigan, Chick and Mrs. Kurth, Ed and Mrs. MacDonald, Dick McKay and son, Lauchlin, and daughter, Martha, Don and Mrs. Morse, Phil Nelles and his daughter, Mrs. Patricia Oram, Bill and Mrs. Ready, Helier and Mrs. Rodríguez and their guests, Harry and Mrs. Rosenfield and daughter, Wilma, Jack Rule, Ray and Mrs. St. Laurent, Steve and Mrs. Seamos, Bill and Mrs. Wald, Al and Mrs. Wechsler, Frank and Mrs. Whelan and daughter, Mrs. Anne Dennison, Dave and Mrs. Woodbury.

Ernest Henderson is a member of the Board of Trustees of the Boston Arts Festival. Among its patrons are Ernie and Mr. and Mrs. **Robert L. Moore**. . . . In August, the Maine Writers Conference was addressed by David O. Woodbury. The illustrated publicity in the Boston Sunday Herald showed Dave and India in their beloved Ogunquit, ostensibly resting, but more likely following one of their unusual pursuits such as checking the gold they had panned in Maine rivers or inventing unique gadgets for Dave's West Coast co-operative to manufacture, or maybe just planning their route for this year's trip back to their winter home in Scottsdale, Ariz.

So-called because their names followed in sequence when revered Harry Tyler called the roll in freshman calculus in 1917, the members of our 4-H Club (Hawes, Hayward, Hill, Huggins) have all been heard from this summer. **Sumner Hayward** reports that he and Betty drove to the West Coast and back, stopping en route at the Hunting Valley, Ohio, home of **Frank E. Huggins, Jr.** Squeeze and his family are living in a new house on an eight-acre estate near Cleveland. **Sanford J. Hill** wrote to say he would attend our 40th reunion, despite its conflict with several family anniversaries. San has fully recovered from his illness in 1959. **Munroe C. Hawes** has a new grandchild and a new son-in-law. The baby is daughter Sandy's (Mrs. Howard Fredericks) first. Munnie and Alex announced the marriage of their daughter, Elizabeth Scott Hawes, to John B. Dalton of Sea Girt, N. J., on June 25. She is an alumna of Emerson College.

Travelers reported since we last gathered around this friendly fireside include **Rufe** and **Madeline Shaw**, who made another European trip. . . . **Saul M. Silverstein** went to Spain early in June on his seventh trip abroad as a representative of the U.S. Government's technical assistance program. Regi is not mentioned in the formal press release we received. . . . **Bill Sherry** and his younger son, Dick, were reported in Venezuela and Trinidad. Bill says his son, Bill, Jr., was graduated from Notre Dame last June in business administration and is with Goldman Sachs Company in New York and St. Louis. He also says that Dick, now aged 12, has put in a request for an invitation to attend our fortieth reunion,—having really enjoyed himself at our 35th and the intervening class parties.

Dr. Flemmon P. Hall is with the Electronics Division of the Speer Carbon

Company in Syracuse, N. Y. . . . **Manuel T. Manosa**, now retired, makes his home in San Juan Rizal, Republic of the Philippines. . . . **Robert S. Cook** has made his regular trek from his summer home in Canandaigua, N. Y., to his winter location in Ft. Lauderdale, Fla. . . . **Eugene A. Clark** gives his home address as 2612 West Lake Drive, Springfield, Ill. . . . **Dr. Manuel S. Vallarta** now lives at Monterrey No. 100, Mexico 7 D.F., Mexico. . . . **Thomas B. Davis** is president of the Davis Company, P. O. Box 3245, Memphis 9, Tenn. . . . **T. Dillwyn Dutton** says he has left Bethesda, Md., for the sunny climes of Sarasota, Fla., where he makes his home at 8716 Dunmore Drive. Is this retirement, T. D.?

Dr. Augustus B. Kinzel, vice president in charge of research of Union Carbide Corporation, recently spoke on "Research and the National Scene" before the M.I.T. Club of New York. A member of the initial Manhattan District Committee, Gus has added to his many activities the presidency of the Engineers Joint Council, the chairmanship of the Engineering and Industrial Research Division of the National Academy of Science, and directorship in the MITRE Corporation, Technology's non-profit research organization, as well as his current membership on the M.I.T. Corporation. . . . **Mark V. Ham-burger** addressed the Newburyport Businessmen's Association, Newburyport, Mass., advocating a program of retail activities to stimulate the downtown business area. A special instructor in merchandising at the Prince School of Simmons College, Mark's experience in retailing has included association with Gilchrist's in Boston, the May Company of Baltimore, the Hecht Company, Washington, D. C., and Sage Allen in Hartford.

Irv and **Ruth Jakobson** were gracious hosts to Helier and Graciela Rodríguez sumptuous dinner at the Manhasset Bay Yacht Club and a supper at their lovely home in Glen Cove on Long Island, N. Y. High spot of the evening was Jake's showing of movies of a recent trip they had made in his boat via rivers and canals through New York State and way up into Canada. Their son, Pete, is entering college this fall. Helier and Graciela were on their way home from Alumni Day after having motored across Canada.

Sumner Hayward, **Joe Wenick** and your secretary have been active in the M.I.T. Second Century Fund program in the Northern New Jersey region. **Ollie Bardes** is the Fund's area chairman in Cincinnati and **Bill Sherry** is the honorary chairman for Oklahoma.

Robert R. Thurston was one of 19 leaders in the field of engineering materials who were signally honored at the annual meeting of the American Society for Testing Materials with the presentation of the society's Award of Merit. Bob has retired as Assistant Manager of the Technical Services Division, Research and Technical Department of The Texas Company, and is now a consultant, living in Jensen Beach, Fla. His citation is "in recognition of generous contribution of extensive professional engineering knowledge to the

development of specifications and methods of test of bituminous materials for roofing, waterproofing and related building or industrial uses, as well as for service on many of the Society's technical and industry committees, specifically on asphalt technology." . . . **Sam Lunden** of Los Angeles, one of the foremost architects in the country and a former national president of the American Institute of Architects, came in for public praise for his untiring efforts in building up the membership and activities of Town Hall, the city's leading civic association. We are indebted to Hiram Beebe '10 for his note about Sam. . . . **Joseph L. Gillson**, national president of the American Institute of Mining, Metallurgical and Petroleum Engineers, was one of the principal speakers at the society's Los Angeles conference on "Metals and Materials for the Space Age."

On behalf of the entire Class of 1921, we extend sincerest sympathy to Betty and **Doug Jackson** on the passing of Doug's mother, Mrs. Mabel Foss Jackson, widow of our beloved instructor and head of the Institute's Department of Electrical Engineering, the late Professor Dugald Caleb Jackson. Mrs. Jackson, who was in her 94th year, will be fondly remembered by those who had the privilege of being invited to 5 Mercer Circle in Cambridge.

During a recent visit to our daughter in Grand Rapids, Mich., we discovered that two classmates lived a few doors down the street, **William B. McGorum** and **Harrison H. Mosher**. We were unable to reach Harrison or **Howard Tut-hill**, who lives nearby in East Grand Rapids, but Maxine and ye scribe were invited for cocktails by Bill and Mildred McGorum and we had a most enjoyable time. Bill asked about many of his friends, including Irv Jakobson, H. Douglass MacDonald '22, Ralston B. Smyth '19 and others of Course II. He is assistant to the president of Darling Freight System, Grand Rapids, and has been vice president of Wolf Engineering Corporation, Dallas, Texas; national sales manager of Hall-Scott Motor Company of Berkeley, Calif.; and district sales manager for ACF-Brill Motors Company. Mildred is a native of Natick, Mass., and the sister of Robert J. Holden, Dean of Freshmen at the Institute. Their son, Bill, Jr., M.I.T. '50, is with American Machine and Foundry Company in New York. Patricia lives in Indianapolis. There are three grandchildren.

On returning to our home in Glen Ridge, N. J., we had the pleasure of an overnight visit from **Phil Nelles**, who was exercising his new Mercedes Benz on a vacation trip all over the East, visiting old friends. We had a royal evening going over the color slides of the 1921 Class Reunion in Havana, which we both attended. Chick Dubé phoned from Boston to invite Phil to a showing of his pictures of our recent 1921 Reunion in Mexico City, and Phil took along data for Chick to use in guest writing the notes of the M.I.T. Club of Mexico. He did such an excellent job for our class notes that it is well deserved recognition to have been asked to write the notes for the Club, too.

Harry M. Witherow, Specialist on Advanced Control Systems in the Knolls Atomic Power Laboratory, retired from the General Electric Company in September, after nearly 38 years' service. Harry was honored at a dinner and presented with a watch and a folio of congratulatory telegrams and letters from friends and associates. Following graduation from the Institute in the first group of Course VI-A, he started with GE in Lynn as an engineer in the Meter and Instrument Department. From 1928 to 1944, he was engaged in demand meter engineering at the GE plant in Ft. Wayne, Ind., returning to Lynn as superintendent of manufacture for Meters and Instruments. In 1949 he became Division engineer for Magnetic Devices at Schenectady, and in 1954, he was assigned to the Knolls Atomic Power Laboratory, becoming manager of SIR Power Plant Equipment until he assumed his latest duties in 1957. He has several patents and has written a number of technical articles. In the days ahead, he plans to spend more time sailing at Marblehead. The Witherows, who reside at 1189 Mohawk Rd., Schenectady 9, N. Y., have twin daughters, Karen and Susan, and we hope the whole family will sail down to the Hotel Mayflower next June. We are indebted to Mrs. J. Harlow of General Electric's Knolls Laboratory for aid in preparing these notes.

For all of his many friends in the Class of 1921, we express sincere sorrow to the family of **August Peter Munning '22** and to the Class of 1922 on his passing last June 30. Gus was a staunch friend who will be sorely missed. On behalf of the class, Maxine and your Secretary visited Regina and their two daughters.

It is with heavy heart that we record the passing of six members of the Class of 1921 and send sincere sympathy to their dear ones for all of us: **Isaac Simon Ascher** of Jackson, Miss., died on June 12, 1957. He was a member of Course VI. . . . **Francis Joseph Callanan**, who was also a member of Course VI, died in Keeseville, N. Y., on Feb. 15, 1960. . . . **Paul Ludwig Deylitz**, Course II, of Rancho Cordova, Calif., died on July 23, 1960. . . . **William Gilbert Horvitz** died at his home in New Bedford, Mass. The date is unknown. He was associated with us in Course I. . . . **Charles Mulford Palmer** of Brooklyn, N. Y., died on August 14, 1957. He was a member of Course VI. . . . **Eliot Underhill** of Course X, whose home was in Los Gatos, Calif., died in San Jose on June 2, 1960.

Random thought for 1961: Why is our *Stein Song*, rated tops as a college song, never identified with M.I.T. by the public? Nor, for that matter, by the movies, radio or TV broadcasters, the record companies, the theater industry, Tin Pan Alley or any related musical associations other than those connected with Technology? What can we do about it nationally in this Centennial Year of M.I.T.? However or how often you vote on this public question in this month of November, practice up on our *Stein Song* and let's give it a whirl at the Mayflower in Manomet next June. Tell us you'll be there! And with your favorable reply, send a few notes for this column and

we'll join you in a joyous Thanksgiving!—**Carole A. Clarke**, Secretary, International Electric Corporation, Paramus, N. J.; **Edwin T. Steffian**, Assistant Secretary, Edwin T. Steffian, Architect, 11 Beacon St., Boston 8, Mass.; **Melvin R. Jenney**, Fortieth Reunion Chairman, Kenway, Jenney, Witter and Hildreth, 24 School St., Boston 8, Mass.

'22

Reporting on Alumni Day 1960 gives great pleasure in rumination. Our class meeting with **Parke Appel** and Madeline in their beautiful home on Old Farm Road in Dover was a most delightful affair. Our thanks also to Joan Appel and her guest for their hospitable assistance. Conversation ranged from size and status of grandchildren to plans for reunion. The annual Sunday rain dampened no one's spirits, but plenty of spirits were available—and such good food. Certainly the 30 or more who were present vote effusive and extensive thanks to our wonderful host and hostess. Another reunion occurred at the luncheon on Monday June 13, and at the evening banquet. Those present included: Mr. and Mrs. Parke D. Appel, Mr. and Mrs. C. Hall Baker, Mr. and Mrs. C. Yardley Chittick, Mr. Fred S. Blacknall, Jr., Mr. and Mrs. George Dandrow, Mr. Fred N. Dillon, Jr., Earl H. Eacker, Mr. and Mrs. William B. Elmer, Mr. and Mrs. Warren T. Ferguson, Mr. and Mrs. Whitworth Ferguson, Dewey Godard, Mr. and Mrs. Joseph H. Keenan, Mrs. F. S. Lincoln, Mr. and Mrs. Theodore T. Miller, Mr. and Mrs. C. Randolph Myer, Miss Marjorie Pierce, Fearing Pratt, Mr. and Mrs. William A. Riley, Hugh M. Shirey, John W. Strieder, Mr. and Mrs. Wilfrid M. Thomson, Mr. and Mrs. Robert Tonon, and Mr. and Mrs. Frank H. Wing. Also, Mr. and Mrs. Alden F. Erickson, Herbert C. Ham, Julian Lovejoy, Miss Florence W. Stiles, Karl L. Wildes, W. R. Hewes, William W. K. Freeman, Mr. and Mrs. Morris J. Gordon, Mr. and Mrs. Oscar H. Horovitz, Mr. and Mrs. Hyman L. Rosengard, R. E. Sherbrooke, and Edwin A. Terkelsen.

The interesting results of the class ballot for the 1962 Reunion indicate that 138 plan or hope to attend, with an even split on preference for stag or with wives. The general preference is to have the reunion before Alumni Day with shore and combination of shore and campus votes about equal. **Don Carpenter**, **Dale Spoor** and **Parke Appel** are continuing activities toward the 40th Anniversary gift. The pledges thus far are satisfactorily phenomenal.

A special magazine article has complimented **Fearing Pratt** for his work as advisor on broadcasting services to stations all over New England. Fearing's job as radio and TV sales supervisor includes coordinating different departments in the telephone company to meet broadcasting deadlines. He also supervises closed circuit TV for private groups, and wired music service to restaurants and industrial plants all over the Boston area and into Rhode Island. . . . **Myer**

L. Alpert, Boston furniture merchant, has been in Europe reviewing the development of a student exchange plan under the sponsorship of the Hebrew Immigrant Aid Society. In this international program of good will, he set up a student exchange plan while visiting Denmark, Italy, Sweden and Switzerland. . . . **Warren Ferguson** has forwarded a magazine clipping picturing **Larry B. Davis**, Vice-President of Mobil International Oil Co., as a new member of the International Road Federation's Board of Directors. . . . An article from Burbank, Calif., informs us that **Oscar Horovitz'** film has placed highest in its category in the Hollywood Film Festival. The presentation was made at the Shrine Exposition Hall in Los Angeles on June 18. . . . **Irving Whitehouse** has been appointed director of research for Republic Steel Corporation, with headquarters at the Research Center. He joined Republic in 1934, and was made manager of the company's Process and Product Development Division in 1940. Irving is married and has five children. He is credited with more than 20 patents. . . . **George Dandrow** has forwarded items regarding a special award, known as the Grinnell College 1960 Alumni Award and Citation, given to **L. F. Hickernell**. As a graduate (before attending M.I.T.), he has demonstrated a fine record of executive leadership, administrative ability, and personal accomplishment.

Frank Kurtz sends regards from the winter headquarters for the class of 1922 on the Gold Coast of Florida, 734 N.W. 9th St., Delray Beach. **Sam Vadner**, **Bob Tonon** and **Ken Sutherland** were visitors there last winter. Frank is only six miles from Boca Raton Club and suggests that our convention-minded members could easily drop by. Here is a paragraph from his letter: "Speaking of retirement, it seems to me that I have never been so busy. I am my own gardener, take care of the swimming pool, have my own shop where I am again designing and making furniture. My painting hobby seems to have gone by the boards, as I don't have the time for it. Play quite a bit of tennis and have helped with two junior tournaments here. Also play bridge, and am treasurer of the Duplicate Club. Been made a director of the Community Fund, and am helping two groups who are studying Spanish. I may teach it this summer at the local high school. We are leaving here the latter part of August for a trip north, to visit two new grandchildren, one in Milwaukee and one in Philadelphia. Stopping many other places, including Winchester, Mass., so may get to the Institute for a day."

Clate Grover, President of Whitehead Metals, Inc., has suggested that we make contributions in memory of friends to the Damon Runyon Memorial Fund and thereby keep in touch with **Jack Teeter**, Executive Director. An interesting note from Jack states that the investment of the fund in M.I.T. for cancer research has totaled \$209,028. . . . Compliments go to **John O. Bower** who has been elected President and Chief Executive Officer of Colsag Corp., parent company of Colombian Oil interests, jointly owned

by Socony Mobil Oil Co. and Texaco. John's headquarters are in New York. He is a veteran of 32 years in the oil industry of South America. For the last two decades he has served as an executive of Texaco affiliates in Argentina, Colombia, Peru, Trinidad, and Venezuela. In 1955 he received the Colombian Petroleum Institute's Gold Medal.

James F. Brittain is now completing his term as vice president of the Boston Society of Civil Engineers. Among the immediate past presidents are **William L. Hyland** and **Edward C. Keane**. The *Journal* of the Boston Society includes the Presidential Address by Ed Keane, titled "Problems of Boston, the Central City of a Metropolitan Area." . . . **Harvey Ladew Williams** has been elected a trustee of the United States Council of the International Chamber of Commerce, and chairman of the council's Committee on Commercial Policy. Last spring Williams was appointed to the World Trade Advisory Committee of the U.S. Department of Commerce. He is president of Philco International Corporation which carries on manufacturing operations in 16 foreign countries through licensees and subsidiaries and which has headquarters in Philadelphia and New York. . . . The cover picture of *Engineering News-Record* of May 19, shows **William H. Mueser**, and other members of Moran, Proctor, Mueser & Rutledge, followed by a most complimentary article, "Foundations are More Than Science." Bill is described in his responsible position as "top-notch job administrator." Among their job accomplishments are foundations for the Federal Reserve Bank in New York, the San Francisco-Oakland Bridge, and the Palace of the Soviets in Moscow. . . . **Valentine Friedrich, Jr.** has been appointed to the newly created position of division manager of the Watervliet Paper Co., by Hammermill Paper Co. He was a director and secretary, and later vice president of the Beckett Paper Co., of Hamilton, Ohio. He will be in charge of all activities at the Watervliet, Mich., plant. . . . An announcement from Schenectady, tells of the marriage of Ensign **Anthony S. Coddling, USNR**, son of the late **Lawrence W. Coddling**. . . . The Standard Oil Co. (New Jersey) has announced as vice president, **Peter T. Lamont**, with responsibility for the Mediterranean area and West Africa. He had been a director, and coordinator of Worldwide Marketing. . . . **Clate Grover** has written, and sent clippings of the death of **August P. Munning** of East Orange. Gus was vice president of Munning and Munning, Newark manufacturers of electro-plating equipment and supplies. Our sincere sympathy to his family. . . . We also extend sympathy to the families of **George F. Fynn**, of Buffalo; **David Wade Guy**, of Philadelphia; **Malcolm G. Dodge**, of Boston; **James T. Mullin**, of West Chester, Pa.; **James W. D. Archibald** of Bronxville, N. Y.; **Hamilton Beattie**, of Tiverton, R. I.; **C. Roger Lappin**, of Lexington; **A. Hutton Vignoles**, of Newton Upper Falls; **Edward L. Brown, Jr.**, of Beverly Farms; **Murdock Goldberg**, of Brookline; and **William H. Bo-**

vey, Jr., of Minneapolis.—**Whitworth Ferguson**, Secretary, 333 Ellicott St., Buffalo, N. Y.; **C. George Dandrow**, Assistant Secretary, Johns-Manville Corporation, 22 East 40th St., New York 16, N. Y.

'23

Twenty-five members of our class, with relatives and friends, took in the festivities of Alumni Day at the Institute on Monday, June 13. The following attended some or all of the day's activities: Mr. and Mrs. Averell; Mr. and Mrs. Bond; Clarence H. Chaisson; Harry M. Chatto, with Richard T. Taisey, Robert F. Munro, and Joseph A. Paradis as guests; Mr. and Mrs. Clair; Manuel Delugach; Thomas B. Drew, with T. B. Drew and Sally Drew; Mr. and Mrs. Ferguson; Louis Greenblatt; Mr. and Mrs. Haven; Mr. and Mrs. Hayden; Mr. and Mrs. Heymans; Robert J. Hull; George A. Johnson; Dr. and Mrs. Kattwinkel; Mr. and Mrs. Kaufman; Charles S. Keevil; Mr. and Mrs. Knight; Mr. and Mrs. Lockhart; Bertrand A. McKittrick; Mr. and Mrs. Robinson; Mr. and Mrs. Skinner; Mr. and Mrs. Stratton; Roy C. Wagner; and Dorothy W. Weeks.

One of the few women in our class, **Dorothy Weeks**, had an interesting article in the August 1960 issue of *Physics Today* on "Women in Physics To-Day." Dorothy is a staff member of the Ordnance Materials Research Office at the Watertown Arsenal. Among other things, she said, "Today's occupational pattern of women in physics contrasts significantly with that of yesterday. The causes of these changes are of necessity conjectural—early marriage, the rapid growth of physics with the need for more physicists, the changing attitudes of public opinion, a lessening of prejudices regarding women in physics, and the public awareness that persons trained in science and engineering are a much needed national resource, being among the many such causes. While women physicists have been, and still are, few in number, they have received Guggenheim, National Research Council, and National Science Foundation fellowships. Two have received the Achievement Award of the American Association of University Women."

Dr. Eger V. Murphree, president of Esso Research and Engineering Co., and former special assistant to the Secretary of Defense for guided missiles, delivered one of the key talks at a dinner meeting of the Industrial and Engineering Chemistry Division of the American Chemical Society in New York City on September 13. Mr. Murphree's subject was "Technical Obsolescence."

Howard Russell has been re-elected manager of Improved Risk Mutuals. We missed Howard and Mildred on Alumni Day but the following excerpts from his letter explain a few things: "Unfortunately, it now appears that I will not be able to attend Alumni Day, June 13, due to the necessity of going to St. Louis that week. For your information, we are adding three large casualty companies to

Improved Risk Mutuals, namely: Lumbermens Mutual Casualty Company of Chicago; Michigan Mutual Liability Company of Detroit, and Utica Mutual Insurance Company of Utica. The addition of these companies will double the assets of the organization and make a very substantial increase in surplus. We are going to be busy! However, it is a plan that I have been working on for years so there are no complaints at this end; nothing except rejoicing. . . . The only other news at the moment is that our son Roger is a Second Lieutenant in the Signal Corps at Fort Monmouth, New Jersey."

Denton Massey was ordained a Deacon in the Church of God at the new St. Paul's Anglican Church in Woodstock, Ontario, on May 26, 1960. His current address is The Rectory, 109 North Alfred Street, Point Edward, Ontario, Canada. Denton has had a varied and interesting career. Some of us remember his tremendous bible classes with their broadcasts, and since that time he has been in the sales field for foreign automobiles, atomic energy plants, etc., and apparently is now back to his first love.

Arthur R. Belyea has been elected director of the American Society for Testing Materials for a three-year term. He is chief chemical engineer of the Consolidated Edison Company of New York, Inc., where he has been employed since 1925. A native of Taunton, Mass., Mr. Belyea received his Bachelor of Science in Chemical Engineering in 1923, and his Master of Science in Chemical Engineering Practice in 1924.

Dr. Herman A. Bruson has been named vice-president for research of the Chemicals Division, it was announced by Stanley de J. Osborne, president of Olin Mathieson Chemical Corporation. Dr. Bruson, who was formerly director of research, organic chemicals, will report to the division general manager's office. A leading polymer chemist, he holds 290 patents in various chemical fields. He will be located at the corporation's new research center in New Haven, Conn.

The following news item from the August 20 edition of the Boston "Herald" concerns our classmate **William Webster**: "Yankee Atomic Electric Co. started its nuclear reactor here at 8:19 Friday night. The chain reaction was the first in New England designed for the production of atomic power. According to William Webster, Yankee President, the company's Rowe plant is the second privately owned, commercial atomic power plant to begin operation in this country."

Two distinguished members of our class received honorary degrees last June. The degree of Doctor of Laws was bestowed upon Dr. **Julius A. Stratton**, who was the commencement speaker, by Carleton College, Northfield, Minn. The degree of Doctor of Laws was bestowed upon **Henry Belin du Pont**, Vice President, Director, and member of the Executive Committee of the du Pont Company, by the University of Delaware.

It is with regret that we report the deaths of the following members of our class: **Theodore P. Bruno**, 291 Boulevard, Pompton Plains, N. J., died March

23, 1958. . . . **Ralph F. Bruns**, 1124 Windsor Ave., Windsor, Conn., died, date unknown. . . . Dr. **George Calingaert**, 10 College Ave., Geneva, N. Y., passed away April 16, 1960. . . . Dr. **Norbert H. Fell**, 5720 Kirby Rd., Falls Church, Va., died Sept. 29, 1959. . . . **Edwin Hobbs**, 63 Hartshorn St., Reading, Mass., died July 20, 1960, at age 64. He was a past master of Gallilean Lodge of Masons of Everett, and operated a heavy machinery supply business. . . . **Phillip F. Kershaw**, 119-05 Liberty Ave., Richmond Hill, N. Y., died, no date given. . . . **Harry S. Koretz**, 73 Kingsdale St., Dorchester 24, Mass., died Nov. 15, 1958. . . . **Kensell Williams**, 202 Caliente St., Reno, Nev., passed away April 24, 1958.

. . . We are also very sorry to report the sudden death on August 7 of Frank Haven's wife, Elizabeth. We will miss her at our various class functions.

We wish to report the following address changes: **Frank S. Archer**, 28 Lake Shore Blvd., Reddendale, Kingston, Ontario, Canada; **A. Griffin Ashcroft**, Chimney Point Rd., Brookfield, Conn.; Mrs. Sten Branzell, Dr. Heymans Str. 7, Gothenburg, Sweden; **Prof. Sherwood F. Brown**, 3 Lancaster Ave., Chelmsford, Mass.; **Alfred A. Clough**, R.F.D. #1, Contoocook, N. H.; **Carl J. Conkey**, Box 121, Marathorn Shores, Fla.; **Harold G. Crowley**, Civil Aeronautics Board, Washington, D. C.; **Stephen A. Days**, 1 Mashnee Village, Buzzards Bay, Mass.; **Mrs. Winter Dean**, Dellwood, White Bear Lake 10, Minn.; **Ellis H. Dennett**, Box 1388, Vero Beach, Fla.; **Charles A. Geisinger**, 1355 Peckham St., Akron 20, Ohio; **Arthur W. Germer**, 183 Lakehill Rd., Burnt Hills, N. Y.; **George W. Gibb**, 60 Granite Place, Milton 86, Mass.; **Harold B. Gray**, R.R. #4, Syracuse, Ind.; **Harry Green**, 61 Broadway, New York 6, N. Y.; **Dr. Robert L. Hershey**, E. du Pont de Nemours & Co., Inc., 9130 du Pont Bldg., Wilmington, Del.; **Cecil H. Hubbard**, 949 Bell Road, Chagrin Falls, Ohio; **E. Fletcher Ingals**, 256 Asbury Ave., Westbury, N. Y.; **Lucian F. Jenness**, Apt. 1037, 4000 Massachusetts Ave., Washington, D. C.; **Dr. Charles S. Keevil**, 130 Meadowbrook Rd., Needham 92, Mass.; **Niels Lassen**, Sollihøgda, Norway; **Robert O. Lee**, Grove St., Kingston, Mass.; **Col. Fred Lindtner**, Otis Air Force Base, Mass.; **John H. Little**, 429 22nd St., Belleair Beach, Indian Rocks Beach, Fla.; **Max Maltzman**, 1116 Calle Vista Drive, Beverly Hills, Calif.; **Neil A. MacNeil**, 134 Nonotuck St., Holyoke, Mass.; **Paul J. Moore**, 7½ East Main St., Mystic, Conn.; **John C. O'Flaherty**, 3715 South Gilpin St., Englewood, Colo.; **Harry R. Raphael**, c/o Mrs. George Slobin, 1026 Calaveras Dr., San Diego 7, Calif.; **Charles V. Reeves**, 4704 Kurtz Rd., McLean, Va.; **Nathaniel O. Robinson**, R.F.D. #1, Woodstock, Ulster County, N. Y.; **Arne H. Ronka**, 3088 S. Woodrow St., Arlington 6, Va.; **John Schuber**, 204 Dorchester Rd., Westvale, Syracuse 4, N. Y.; **William L. Searles**, 154 Cedarwood Rd., Stamford, Conn.; **Col. Robert Sears**, 72 Montrose Ave., Daly City, Calif.; **Charles Shilowitz**, 26 Journal Square, Jersey City, N. J.; **Aaron H. Stern**, 29 Commonwealth Terr., Brighton 35,

Mass.; **Georg Vedeler**, Gulleraasvie 3, Slendal, Norway; **Julius H. Werner**, 1450 Broadway, New York 18, N. Y.; **Arthur J. Westcott**, P.O. Box 984, Lake Worth, Fla.; **George B. Will**, 71 Craigmore Circle, Avon, Conn.; **J. Curtis Willson**, 1781 Rathmor Rd., Bloomfield Hills, Mich.; **Elwood A. Windham**, 57 W. Meadow Rd., Wilton, Conn.; **John H. Zimmerman**, Union Carbide Corp., Linde Div., 270 Park Ave., New York 17, N. Y.; **H. H. Zornig**, P.O. Box 1722, Coral Gables 34, Fla.—**Herbert L. Hayden**, Secretary, E. I. du Pont de Nemours & Co., Leominster, Mass.; **Albert S. Redway**, Assistant Secretary, 47 Deepwood Drive, Hamden 17, Conn.

'24

Welcome back to our running account of the varied and intriguing fortunes of the Class of 1924. Hope you've all had as pleasant a summer as your secretary, but very few of you told him anything about it. We know that **Bill MacCallum** has been shuttling from coast to coast as usual, with his home now transferred to a 16th floor apartment in New York. There's a large balcony that looks down on Washington Square, "and from up there it's beautiful. Can't smell the beatniks." . . . The **Cardinals** also moved during the summer, but still managed to put in a good bit of time at the shore as usual. In his usual thorough manner, Paul sent out the most complete directions ever, for reaching their new Upper Montclair estate. Told how to get there from north, south, east, west, and via Los Angeles. Guaranteed to get anybody lost.

Pret Littlefield and **Howard Stevens** didn't enjoy at least a part of their summers. Both were in the hospital for a bit, but at last reports they're coming along fine. . . . The **Ambachs** went to Europe and thoroughly enjoyed it. They were in Germany and the Netherlands. Went over by ship, back by jet. . . . Of course **Hank Simonds** was cruising the Pacific. Japan, Okinawa, Korea, and Taiwan were among the spots he hit. At Okinawa they were driven out of the harbor to ride out a typhoon named Trix. The latest word, in September, was from Thailand. "Bangkok spreads out like L.A. Don't underestimate this country." . . . **Dick Lassiter** did the honors at his daughter Wendie's wedding in July. . . . **Andy Kellogg** participated in nuptials at first hand. On August 27 Mrs. Frances E. Pepler and Andy were married in St. Cuthbert's Church, Oakville, Ontario, by the Rev. J. H. B. Rye. They were in Boston shortly thereafter, but unfortunately your secretary missed them. . . . **Hortensia** and **Mike Ameza** finally had to give up. They left Havana in late August for Mexico. It's rather a frightening prospect to give up a business you've spent a lifetime building and go to a new country and new work. Not quite sure at the moment what that work is, but we'll let you know later. Their daughter Julia and her husband and children left earlier in the summer. He will work for Dewey & Almy in Spain.

For some years **Elwood Proctor** has been manager of production on the West Coast for Bemis Bag. On September 1 he moved to headquarters in St. Louis where he became assistant director of production for the whole company. . . . At the same time **Robert J. Mitchell** moved in the other direction, from Division Sales Manager of Dennison Mfg. in Boston to the same post in San Francisco. . . . Of course the big news of the summer, in fact of the year, concerns the Rev. **Denton Massey**. You've been sending me notes and clippings from everywhere. The most complete by far was in the London, Ont. *Free Press*, complete with an impressive picture of Dent in his ecclesiastical robes standing in front of his altar and looking remarkably like cousin Raymond. "Parliament to Pulpit," said the caption, and the story started. "A conversation over a cup of afternoon tea prompted Rev. Denton Massey to enter the Anglican ministry at 59." Just goes to show what tea in the afternoon can do, especially if it's with a smooth-talking Anglican bishop. Too bad the Kelloggs didn't get to Point Edward and have the Rev. Massey officiate, making it an all-'24 affair.

A few business notes. "On the advice of the Securities and Exchange Commission," Capital Airlines elected **Gordon Y. Billard** to its board, representing the holders of the company's debentures. You will remember that Capital has been having a bit of financial trouble lately. Bill is managing partner of the investment banking house of Carreau & Co., and is chairman of the new debenture protective committee. . . . Up in Lawrence, Mass., there has been quite a ruckus caused by a contractor not completing an airport runway extension. The airport commission held lengthy hearings, which as far as the newspaper report indicated, were inconclusive. The contractor was represented by Atty. **I. Henry Stern**, "who said he is also an engineer and a graduate of M.I.T." . . . Out in Worcester, **Sargent Heath** has been elected treasurer of the Washburn Co., also secretary and director of a couple of Washburn subsidiaries in the wire goods field. . . . Simplex Wire & Cable has elected **John T. Blake** senior vice president in charge of all engineering and manufacturing. John has been with Simplex in many posts since getting his Ph.D. with us in '24.

In the academic business, Dr. **Edward A. Saibel** has been named chairman of the Department of Mechanics at Rensselaer. He went there from Carnegie Tech in 1957. He succeeds another M.I.T. man, Dr. William R. Osgood '19. . . . And Washington and Jefferson College has added **J. Earl Frazier** to its corporation as a life member. Earl graduated from W. & J. before coming to M.I.T. and in 1958 received their citation "for distinguished service."

The \$66 million Second Century Fund is moving along. A couple of your classmates have been named area chairmen: **Howard Whitaker** for Central Ohio, and **Max Ilfeld** for Albuquerque. Everything contributed by '24 men to either the Second Century Fund or the annual

Alumni Fund will be reported as part of our 40-year gift four years hence.

As you know, a new Alumni Register appears next year, and the first request for information has brought a flood of responses, among them, many death notices. Six have been reported for our class, although only one is recent. **Jayson C. Balsbaugh** died in July. Many of you had him in Electrical Engineering while he was studying for his doctorate. Jay stayed on the faculty until 1953 when he left to do consulting. **Samuel E. Cotter** and **Daniell N. Officer** died in 1959; **Frank E. Knight** and **James E. Buckley** in 1957; and **Ray Meade** at a date unknown to us. . . . **Bill Rivers** started with '24 although he graduated in 1926. Bill spent most of his working life in India. He went to Nepal for the U.N. last fall and died suddenly this summer.

As this is written, a big Second Century Fund meeting is coming up here in Cambridge. Hope to be able to pick up some hot news from the '24 men there. Max Ilfeld, from New Mexico ought to be good for some.—**Henry B. Kane**, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

Our Thirty-fifth Reunion, so ably directed by **Ed Kussmaul** and **Dave Goldman**, is now history. For the official record, the following attended all or part of the reunion activities, including Alumni Day at Cambridge: **Bill Asbury** and wife; **Bob Ashworth** and wife; **Arnold Bailey**, wife, and son "Chip"; **Ed Booth** and wife; **Harrison Browning**; **Ted Butler** and wife; **Sam Caldwell** and wife; **Henry Chippendale** and wife; **Austie Cole**; **Charles Cooper**; **Alan Crowell** and wife; **Cuthbert Daniel** and wife; **Gil Delugach**; **Fred Dolan** and wife; **Chink Drew** and wife; **Dow Drukker** and wife; **Doc Foster** and wife; **Maurice Freeman** and wife; **Franklin Fricker** and son, **Daniel**; **Sam Glaser** and wife; **Dave Goldman** and wife; **Ernie Greenough** and wife; **Fred Greer** and wife; **Gus Hall** and wife; **Payson Hammond** and wife; **John Handy** and wife; **Bob Hodson** and wife; **Jim Howard** and wife; **Max King** and wife; **Ed Kussmaul**; **Mac Levine** and wife; **George McDaniel** and wife; **Ed McLaughlin**; **Ron Mitchell** and wife; **Frank Mulcahy**; **Mike O'Brien**; **Rufe Palmer** and wife; **Dave Peene**; **Al Prentiss** and wife; **Tom Price** and wife; **Milt Salzman**; **Roland Seabury** and wife; **Sam Spiker** and wife; **Ave Stanton** and wife; **Don Taber** and wife; **Chet Trask** and wife; **Mr. and Mrs. Lynwood Tripp**; **Hollis Ware**; and **Harold Washburn**.

Following registration on Friday evening, June 10, at the Chatham Bars Inn, dinner was served in the spacious dining room. Then the classmates gathered in the ball room, in front of a roaring fire, which was much appreciated. An informal evening of entertainment was provided by none other than **Chink Drew**, who just happened to have the necessary props available so that he could present a program entitled, "100 Years of Popular Music." Although Chink endeavored

to keep the program down to about one-half hour, all of those present insisted on its being prolonged because it provided such pleasing entertainment. It brought back many pleasant memories to all of us of the last 40 to 50 years, up to the present.

Saturday morning, with events planned principally for the outdoors, we found a coastal storm whipping the elbow of Cape Cod. This failed to dampen the spirits of the class, however. After breakfast, several groups took off for Provincetown and other points of interest in the neighborhood of Chatham, and a few even found it possible to play some golf between the showers. Others sat around and renewed acquaintances. The clambake which was to have been on the beach was moved indoors, and was perhaps even more pleasant, since the sand was not brought in with the lobsters and clams! The evening was a repeat of the morning, followed by a cocktail party, provided by the Reunion Committee, and the official five-year 1925 Banquet. The group then adjourned to a small auditorium where a short business meeting was held. The secretary was asked to read a list of those members of the class who had passed on during the last five years, and a moment of silence was observed in their memory. A Nominating Committee, consisting of **Ave Stanton** as Chairman, **Tom Price** and **Ted Butler**, submitted a slate of officers to serve for the period 1960-65. This slate was unanimously approved as follows: For Class Officers: President, **Fred Greer**; Vice Presidents: **Carl Mabley**, **Harrison Browning**, **Mac Levine**; Secretary-Treasurer, **Doc Foster**; Historian, **Ed Kussmaul**; Class Agent (confirming appointment by Alumni Fund Board), **Chink Drew**. For Executive Committee (members at large): **Bob Ashworth**, **Franklin Fricker**, **David Goldman**, **George McDaniel, Jr.**, and **Sam Spiker**.

Prizes which had been provided by several members of the class were then awarded. Those who had contributed prizes in goodly numbers were **Bob Read**, **Sam Spiker**, **Fred Greer**, **Ed Kussmaul**, **Ben Oxnard**, **Bob Ashworth**, **Chink Drew**, and **Dave Goldman**. Entertainment followed with a song stylist, a comedian, a tap dancer, and a magician. This completed the day's activities as planned by the Committee, but many of the class joined with the Class of 1940 for dancing, with music provided by the hotel.

By Sunday morning, many classmates were departing, several played golf; and others just enjoyed the pleasant weather which followed the storm on the previous day. A number came on to Cambridge and participated in the Alumni Day affairs which followed on Monday.

At the business meeting on Saturday evening, messages from many members of the Class who found it impossible to attend the reunion were read. Among those whose plans were changed so they were unable to be with us were **Ben Oxnard**, **Karl Van Tassel**, **Carl Mabley**, **Fran Cuniff**, **Bill Steinwedell**, **Ted Mitcham** and **Bob Read**. **Tom Killian**, who is Deputy Chief and Chief Scientist of the Office of Naval Research, had been making very definite plans to be at the

reunion, but shortly beforehand received orders to proceed to Pearl Harbor in the Hawaiian Islands on Sunday morning, June 12 for two weeks active duty. A telegram was received from **Wade Johnson** expressing his regrets at not being with us; and **Rusty Blair** called us at the hotel to extend his "liquid" greetings.

One sad note in connection with the reunion was the fact that **Henry McKenna** who had gotten the planning off to an excellent start could not be present to enjoy the event. His wife, **Thelma**, had been most helpful in some of the planning for the reunion but did not find it possible to join us. Congratulations are most certainly in order for the fine job done by **Dave Goldman** and **Ed Kussmaul**, the Co-Chairmen!

Congratulations are also in order for **Dave Goldman** for completing all the requirements to be certified as a qualified member of The Million Dollar Round Table of the National Association of Life Underwriters. This is one of the most exclusive clubs in the world. It consists of the top echelon of life insurance agents in the world. It is considered a real honor to qualify for this club, and one only maintains membership by continuing his good work.

The first president of our class, **Glen Bateman**, died on January 24, 1960, at the early age of 56, following a very short illness. **Don Henderson**, who knew Glen quite well both as a close friend and a business associate in the motion picture business, has provided a record of Glen's life accomplishments. It seems only fitting that this fine statement, indicating to all of us the accomplishments of the first president of the Class of 1925 should be recorded in these notes. Don's excellent statement of Glen's life follows:

"Glen L. Bateman, engineer, civic leader, war ace, husband and father, was born in Johannesburg of American parents, shortly after the turn of the century. Glen early was destined to assume the responsibility for the direction of the Edward L. Bateman Company which was founded in Johannesburg by his father, the late Edward L. Bateman, in 1919. The company, started by his father, grew under Glen's direction to become, at the time of his death, the foremost metallurgical construction firm in Southern Africa.

"Nurtured by his father and his charming mother, who, pioneering in a growing country, was the recognized leader of the American Community in social and welfare activities, Glen attended Parktown Preparatory School and King Edward School in Johannesburg. Following two years of preparatory work at Andover, Glen entered Massachusetts Institute of Technology.

"At M.I.T. Glen was prominent in all campus activities, but his principal extra curricular activity was sport. He ran the 440 and was a member of the track and field team. This interest in sport was reflected later by his keen participation in the activities of the Country Club, Wanderers, Inanda Club, the Baragwanath Light Plane Club and the Rand Club.

"Glen began his professional career in 1925 when he returned from M.I.T. and joined his father's company to be trained

and to grow for his ultimate responsibility. At the outbreak of World War II, Glen joined the South African Air Force and continued in the service until the end of hostilities. His career in the Air Force was distinguished by extraordinary acts of bravery. Over the African desert, as a young Lieutenant in the early days of the war, his plane having been disabled and in flames, he was able to save his crew and himself in the true tradition of the Air Force. Later in the war, he was made a prisoner and spent some time in Greece.

"Following the war, Glen returned to the Edward L. Bateman Company and, after his father's death in 1952, was made managing director, which position he retained until his semi-retirement in 1959.

"Glen was a builder: of things, of communities and of what we all believe to be a responsible way of life. Despite the fact that he lost his American citizenship by joining the South African Air Force, he continued to be American in outlook and was an ardent supporter of American activities in South Africa.

"Glen will be missed by his associates, but the organization left behind has been designed to carry on. He leaves a widow, Joan; three children, Claire, Bill and Jane; and a brother, Edward, to all of whom the American community extends its heartfelt sympathy."—F. L. Foster, Secretary, Room 5-105, M.I.T.

'26

We usually write class notes at the crack of dawn on Sunday but today's schedule prevented this so here we are with the Dictet on the terrace basking in the late afternoon sun. We have quite a collection of clippings that have accumulated during the summer, but first let us go back to our Alumni Day, June 13. Following is a list of members of our class who attended this year. Harvey C. Abbott and Mrs., Judson T. Biehle and Mrs., Frederick P. Broughton and Mrs., Lawrence G. Cumming and Mrs., Robert T. Dawes and Mrs., Robert C. Dean and Mrs., Charles S. Draper and Mrs., George P. Edmonds, Harry F. Howard and Mrs., James R. Killian, Jr. and Mrs., Benjamin Margolin and Mrs., Robert B. Morrissey and Mrs., Stewart S. Perry, E. Sterling Pratt and Mrs., Chenery Salmon, George Warren Smith and Mrs., Flint Taylor and Mrs., F. Martin Towle and Mrs., Martin Walter, Edward Wayne, Abraham White and Mrs., John B. Wilbur and Mrs.

There was considerable discussion about our coming 35th reunion in June 1961. **Bob Dawes** has accepted the Chairmanship for the reunion and has already signed up the Hotel Belmont in West Harwich on Cape Cod. We attended a meeting there a year ago and the hotel had been completely rejuvenated with the addition of a tremendous cocktail lounge in the form of a large circular building. The private beach is as fine as any on Cape Cod and we can look forward to most excellent facilities. New elevators have even been installed. You'll

be hearing more about the reunion as the months pass, but I thought you would like to be giving it some thought.

This summer brought several classmates to Pigeon Cove. Two of them happened to come while I was vacationing during August, so I was fortunate in seeing them. **Betsy** and **Jim Drain** were visiting Jim's sister for a couple of days in Rockport and stopped over one evening for cocktails. Jim, after many years with the Joy Manufacturing Company, recently became the vice-president of the H. K. Porter Company of Pittsburgh. If you haven't seen Jim in recent years you would be surprised to see that his appearance has not changed since 1926 nor has he lost any of his drive. I tried to obtain the formula from him, but he keeps it a secret. A few days later **Elton Staples**, his wife and his daughter-in-law dropped by. They phoned one evening from an inn in Rockport and paid us a visit the next morning before they continued their tour of New England. Elton was made president of Heavy Duty Electric Company early this year, after having served as its general manager and vice-president in charge of sales. Elton, a former New Englander and now a resident of Milwaukee, was back in the old stamping ground and showing some of the sights to his daughter-in-law. Our other visitor came while I was sailing the last yacht race of the season on September 10. **Donald Chase** and his wife were also touring the area and stopped by to see this place, Pigeon Cove. Don is sales manager for extruding machines for the Farrel-Birmingham Company in Ansonia, Conn. I hoped to catch up with him at the meeting of the American Chemical Society in New York, but missed him again.

A note just arrived from **Tom Green** with a clipping from the New York Times, which perhaps some of you saw. Our classmate **Bill Rivers** has died in Calcutta, India. Bill, as you know, retired a few years ago from Standard-Vacuum Oil Company after having represented them for many years in India. About a year ago Bill was appointed manager of the Nepalese Industrial Development Corporation under the United Nations program set up to provide operational and executive personnel to countries engaged in economic development. He had a fall in August in a Calcutta hospital where he had gone for treatment of a blood pressure condition and injuries from this fall brought about his death. We regret having to report this sad news about a loyal classmate. You will recall that for the many years Bill was in India he always planned to be back in the United States for reunions, and attended most of them. Thanks, Tom, for sending us this.

The sun has now dropped behind Pigeon Hill and the evening breeze is blowing our clippings around on the terrace. We therefore will drop them back into the folder and pick up again next month. We hope that all of you have a very pleasant Thanksgiving holiday and don't forget to drop us a note even if it is just a postcard about your activities.—George Warren Smith, Secretary, E. I. duPont de Nemours & Co., 140 Federal St., Boston, Mass.

It is with deep regret that we announce the death of **Alf K. Berle** in Norway the latter part of July. Alf was en route to Norway to visit relatives with his wife and son when he was taken suddenly ill during his last day at sea. Upon docking, he was taken to the largest hospital in Bergen, where he died within a short time. The alumni there were notified and did what they could to help. **Amund Enger** saw the family a few days later in Oslo and did all he could to assist and comfort them. I was deeply shocked to hear about Alf's sudden passing as we had been roommates during our junior year. He has always been active in M.I.T. affairs, was our class agent, on the Alumni Council, and did a most excellent job over a period of 18 years for our class.

In Swampscott, according to the Lynn (Mass.) *Item*, the title of poet laureate would be a fitting tribute to a personable physicist of the seacoast community, **Laurence Burns**, whose poems appear regularly in editions of that paper. Formerly a college instructor, he is now chief patent attorney for the Lighting Division of Sylvania Electric Products, Inc., at the Boston Street plant in Salem, and has authored hundreds of poems with a variety of themes. He readily admits the subjects range from the sublime to the ridiculous. Laurence has always had an interest, and apparently much talent, in writing. His daughter Carolyn, a junior at Emmanuel College in Boston, has inherited her father's flair for writing and is serving as literary editor of her school's yearbook. In addition to his poetry, Laurence has written several theoretical scientific articles, which have been published in the *Physical Review*, *Sylvania Technologist* and *Journal of Electrochemical Society*, to name a few. One of Swampscott's few outspoken Democrats, he did not seek re-election to the town Democratic Committee this year. He is actively affiliated with Upper Swampscott Improvement Association, Optical Society of America, Patent Institute of Canada, and Boston Patent Law Association, of which he serves on the chemical practice committee. In addition, he has been a Town Meeting member for several years, and has served on numerous town committees.

Here are those who attended the Alumni Day exercises on June 13: Mr. and Mrs. Dwight C. Arnold, Mr. and Mrs. Samuel S. Auchincloss, Mr. and Mrs. Robert M. Bigelow, Mr. and Mrs. John J. Boyle, Mr. and Mrs. Joseph C. Burley, Edward Chase, Mr. and Mrs. Nelson O. Clark, Mr. and Mrs. James F. Collins, Mr. and Mrs. Harold E. Edgerton, Mr. and Mrs. Glenn D. Jackson, Jr., Mr. and Mrs. Frank Marcucella, Marcus P. Robbins and his son, Sam H. Robbins, Ezra F. Stevens, Mr. and Mrs. Robert Wise, and Mr. and Mrs. Clarence L. A. Wynd.

We regret to advise of the death of **Richard W. Spry** the latter part of May, following a heart attack. Dick made his

home in West Newton, Mass., and was associated with Stone & Webster Company. He is survived by a son, David R. Spry, 12. . . . We were very sorry to learn of the death of **Richard Cutts'** 16-year-old daughter during the summer. . . . **Edward H. Wells**, of Darien, Conn., has been appointed General Manager of the Johns-Manville Dutch Brand Division at Chicago, Ill., and in his new position will be responsible for the manufacture, sales, and distribution of the J-M Dutch Brand line of pressure-sensitive tapes, adhesives, and electrical insulation products. Ed has been with J-M since 1928. . . . **Jim Lyles** has asked **Glenn Jackson** to take over the job as Class Agent, now vacant due to the death of Alf Berle.

Charles Victor Bullen, one of the Southwest's most respected educators in Electrical Engineering, retired at Texas Tech on May 31. Professor Bullen headed Texas Tech's Electrical Engineering department since 1932, and has been one of the main representatives in the Southwest for the Engineering Council for Professional Development, checking on the standards and counseling on the growth of electrical engineering departments and engineering education in general. Texas Tech's Board of Directors conferred emeritus rank on him in accepting his retirement. A native of Belleville, Kansas, he received a B.S. degree from the University of Texas. After working as an engineer with General Electric and teaching several years at Oklahoma State and the University of Arkansas, he took an M.S. degree from M.I.T. He then joined the University of Oklahoma faculty, teaching there until he went to Texas Tech as Electrical Engineering department head.

First use of deep-sea sound wave recordings of the ocean bottom, to position underwater cameras accurately when suspended on cables thousands of feet below the surface of the Atlantic, was made during a recent oceanographic exploration expedition. Dr. **Harold E. Edgerton** tells of new methods for using precision Alden-Alfax sonar recordings to position his cameras and to photograph hitherto unrevealed floors of deep ocean chasms in an exclusive article in the first issue of a new quarterly publication available from the Alden Electronic & Impulse Recording Equipment Co., Inc. As part of the U.S. scientific contribution to the International Geophysical Year, Dr. Edgerton accompanied the famed French explorer, Captain Jacques Yves Cousteau, aboard Cousteau's research vessel, *The Calypso*.

From the M.I.T. Club of Framingham, Mass., we have recently received word that **Harvey A. Fitts** has been elected club vice president, and **Fermo A. Bianchi** has been appointed chairman of the nominating committee.

Harold W. Fisher, a director of Standard Oil Company (New Jersey) gave the commencement address and received the honorary degree of Doctor of Science at the 67th commencement exercises at Clarkson College of Technology in June.

While vacationing in July, I ran into **Horace Emerson**, and we had a very

pleasant chat. He is located in Westerly, R. I., where he operates his own civil engineering and survey office, and enjoys the outdoor life.

Nat Cohn and I literally bumped into each other in Grand Central station. He is now vice president for technical affairs of Leeds & Northrup in Philadelphia, and a vice president of the Instrument Society of America, and had just returned from Moscow, where he was an American delegate at an international meeting on automatic controls.

Membership in The Christian Science Board of Lectureship for the coming year was announced recently by The Christian Science Board of Directors, and among the six new members appointed, was **Charles M. Carr**, of Montclair, N. J. This classmate has had considerable experience in the public practice of Christian Science and in branch church work. A lifelong Christian Scientist, he joined The Mother Church in 1931, received primary class instruction in Christian Science in 1935, and entered the public practice seven years later. From 1944 to 1954 he served on the Committee on Publication for the State of New Jersey. In 1952, following instruction in the normal class of the Board of Education, he became an authorized teacher of Christian Science.

Paul S. Vaughan, chief engineer, engine development, Alco Products, Inc., Schenectady, N.Y., presented a paper entitled "Economics of Engine Power—Development of the Alco 251 Engine," at the 32nd annual conference and exhibit of the Oil and Gas Power Division of The American Society of Mechanical Engineers in Kansas City the latter part of May. The theme of his presentation was the effect of engine-design features on first cost, installation cost, fuel cost, and cost of maintenance and repair as these items relate to the development of the Alco 251 engine.

We are in receipt of a questionnaire form recently completed by **William C. Morse** which indicates he is now retired and living in University, Miss. . . . **Theodore E. Casselman, Jr.** was elected a vice president of the Stone & Webster Engineering Corporation in June. . . . We have received notice of the following deaths, on which we have no details: Captain **Edward C. Craig**, Cumberland Foreside, Maine, on Aug. 8; **Joseph L. Aman**, Mt. Rainier, Md. (no date given); and Rear Adm. **Bernard E. Manseau**, Washington, D.C. in Nov., 1957.—J. S. Harris, Secretary, Shell Oil Company, 50 West 50th St., New York 20, N. Y.

It is our pleasure to start a new season with notes received during the summer—our sincere thanks to those who have written. The Review office has asked that notes be terse. This should be of some encouragement to those of you who fail to write in for lack of time.

The business page of the Boston *Traveler* for Friday, July 22 reported that, "I-T-E Circuit Breaker Company, Phila-

delphia, announces that Dr. **Eugene W. Boehne**, professor of Electrical Engineering at M.I.T. and administrator of its co-operative courses in electrical engineering since 1947, has joined their engineering staff. He has been named consulting engineer-research and development." Our very best wishes to you in this new venture, Gene.

Charlie Worthen spotted a news item on **Bob Peatfield** in a recent issue of *Electrical Engineering* and mailed it to us in two installments. Bob, who is assistant chief electrical engineer for Stone & Webster Engineering Corp., Boston, has been transferred to the grade of Fellow in the American Institute of Electrical Engineering. Following this news, the item goes on to recite an impressive list of Bob's accomplishments. We would like to hold this detailed report for another time when we can do it real justice. In the meantime, our congratulations, Bob. And many thanks to you, Charlie.

Bill Kirk's son George received the Clifford Award at the Institute's annual Awards Convocation. Presentation was made by Richard Balch, Director of Athletics. George was captain of M.I.T.'s hockey and sailing teams. We are proud of you both, gentlemen!

Our congratulations to **Ellis Johnson**, who received the honorary degree of Doctor of Science at the 84th Commencement of Case Institute of Technology on June 2. Ellis is director of the Operations Research Office at Johns Hopkins University, the first of such groups in the United States. He has made major contributions to the fields of electrical engineering, geophysics, and history of the earth's magnetic field. During World War II he played a major role in developing means of protecting ships against magnetic mines.

Ed Stevens, Course XV, was recently elected president of his company, Baldwin-Ehret-Hill, Inc. **Ralph Jope** has sent Ed a note of congratulation already, so we will add our very best wishes for continued success.

Jim Donovan is still serving as one of our best reporters. Last month he attended a Heat Transfer Symposium in Buffalo and met **Melvin Sack**. Mel is now manager of the Heat Exchange Division of Henry Vogt Machine Company, Louisville, Ky.

With regret we must report the deaths of four classmates. **Henry B. Duncan**, Course I, of Monrovia, Liberia, Africa, died Dec. 17, 1959.

Harold J. Brown, Course XV, died, date not given. Harold lived in Washington, D. C. according to the last address we have.

Isaac H. Trabue, Course X, died at his home in Louisville, Ky., on July 5. Before moving to Louisville, Isaac was a chemical engineer for the Standard Oil Company in New Orleans. . . . **Rufus B. Scott**, who studied in Course II, died on May 29, 1955. His last address was in Wellsville, N. Y.—George I. Chatfield, Secretary, 11 Winfield Ave., Harrison, N. Y.; Walter J. Smith, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.

'29

Alumni Day on June 13 flushed out many of our good friends and classmates. Those attending were Ted Alexieff and his wife, Charlie and Mrs. Allen, Bill Baumrucker, Marguerite and Win Bearce, Kay and Eric Bianchi, Ruth Dean, Fran and Paul Donahue, Charlie Frank, Joan and Wally Gale, Bill Harris, Jack Mark, Mary and Frank Mead, Howard Pankrat, Violet Parker and her husband, Ray Shriver, Doc Weddle, Val and Bill Whiting, D.A. and John Wilson, and Peg and Yours Truly. We had a grand day and the weatherman was far better to us than was the case a year ago.

As you all read in the Review, **John Wilson** is heading up the Second Century Fund Drive announced in June. It is an ambitious program in fund raising, but we know that John is the boy to guide the drive. We all congratulate him on his appointment, and I trust we will all get behind him 100 per cent.

In July it was announced that **Paul Keyser** has been named president of Socony Mobil Oil Company's newly-formed Mobil Chemical Company. Paul's promotion was from senior vice president in charge of Planning, and in 30 years with Socony, he has moved from Research to Manufacturing to Marketing and into their Foreign Trade operation. In the most recent years he has been engaged in top-level administration at Socony. Along with his duties as president of Mobil Chemical, he is an executive vice president of the parent company. Paul has great plans for enlarging Socony's petro-chemical operation, which is already a \$90 million business, with his eyes on the lucrative markets in plastics, synthetic fibers, detergents, synthetic rubber, paints, and industrial and agricultural chemicals. Paul lives with his wife, the former Aslaug Brekke, in Douglaston, Queens, N.Y. They have one daughter, Kari, who is now married and living in England.

On June 1, **Eric Bianchi** was named general manager of Mason-Neilan Division of Worthington Corp., where he is in charge of their entire manufacturing and sales organization in the field of industrial controls and regulators, with offices and distributors throughout the world. Previously, Eric had been vice president-engineering. He joined Mason-Neilan in 1931.

Congratulations to both Paul and Eric. **Floyd Buck** has recently been named engineering manager of The United Illuminating Company in New Haven. Floyd was formerly superintendent of engineering and joined United Illuminating in 1940.

A recent press release announces that **Dan O'Connell** has been appointed a trustee of American International College. Dan is president of Daniel O'Connell's Sons, Inc., in Holyoke. Dan is a member of the Holyoke Municipal Planning Board and was formerly president of the New England Road Building Association and the Building Trades Employers Association of Western Massachusetts.

He served for several years as president of the Holyoke Chamber of Commerce, headed up the Holyoke Community Chest, and was the recipient of the William G. Dwight award in 1955 for outstanding and sustained community service. Our congratulations to Dan.

Since our last notes, we have received news of deaths of several members of the class: **Arthur Gulliver**, Course I, early in the year; **Donald Rushworth**, Course III, late in 1957; **Francis Faust** (Faustini), Course IV, no date given; and **Arthur Palmer**, Associate, 1953. I want to express the deepest sympathy of the entire class to their families.—Fisher Hills, Assistant Secretary, 62 Whittemore Ave., Cambridge 40, Mass.

'30

As most of you know, our 30th reunion was held June 10 to 12 at the Oyster Harbors Club on Cape Cod. Forty-seven of our classmates, of whom 41 were accompanied by their wives, participated in some or all of the scheduled events. Representing the younger generation were Kathy Ross, Stewart Wilson (M.I.T. '60), Tom Latham, and his friend Herman Wolter, and Bob Lister. Tom has decided to try the competition and is entering Cal Tech this fall.

For the benefit of those classmates who have not visited this part of the Cape, it might be noted that Oyster Harbors is an ideal spot for a reunion. The club comprises a large and comfortable clubhouse with excellent accommodations, flanked on one side by an inlet with a private bathing beach and on the other by a well-manicured and challenging golf course. Tennis, shuffleboard, and putting facilities are also available.

By late afternoon on Friday nearly all those attending had registered. As usual the first order of business was covert appraisal, and perhaps some not so covert appraisal, of the outward effects of time's passage. It seemed to this observer that Nature had been somewhat more benignly disposed toward our classmates during the last five years than during the preceding five. It is gratifying to be able to report that for our reunioning members the second derivative of physical attrition with respect to time has definitely dropped below zero.

The first scheduled event was a get-together for cocktails, followed by a delicious buffet supper. After supper there was much good talk, updating of friendships and dancing to a band, ably assisted by **George Gasset**, whose saxophonic talents have remained undimmed.

Saturday dawned in a dismal drizzle. Radio reports of fine weather everywhere except on the Cape did little to brighten the spirits. However, by 11 o'clock the downpour had abated sufficiently to induce a number of the more optimistic members to venture forth on the golf course. Non-golfers solaced themselves with bridge, books, sight-seeing, and shopping expeditions.

At four o'clock a bus arrived to transport us to the summer home of **Dave Wells** who had generously invited us all for cocktails. Dave's house is located on a lake in a secluded area of Wianno, in fact, so secluded that our bus driver passed it by completely the first time around. On the second circuit we were rescued from further meandering through the outskirts of Wianno by little Mary Wells who stood by the roadside waving a sign bearing our host's name. Upon descending from the bus, we were greeted by Dave and his charming wife, Jean, and permitted to roam at will through their house, which features such intriguing items as a four-sink kitchen and a set of tiny inlaid metal footprints leading through the house and terminating at the refrigerator door.

After a pleasant interlude at Dave's house, we returned to the Club for another fine meal and our business meeting. Presiding over the post-prandial proceedings, **Jack Latham**, our hard-working and conscientious President, first called on **George Wadsworth** and **Joe Harrington** for their reports as Secretary and Treasurer. Joe reported that for the interval since the last reunion, interest income just equalled expenses, and hence, ignoring inflation, we are holding our own financially. **Dick Wilson**, as Chairman of the Nominating Committee, proposed a slate of officers for the next five years, comprising Joe Harrington as President, **Ed Kingsley** as Treasurer, and your reporter as Secretary. No dissenting votes were audible.

The special awards were delivered by **Tom O'Connor** with lively and pointed comments. The award for having traveled the greatest distance went to **Maco MacKinney** and **Doris**, of Mexico City, who did a superb job as unofficial public relations representatives for their bustling and burgeoning homeland. The **Ed Harris** received an award for having sustained the most difficult trip.

In the grandchildren department there was a tie between the **Joe Prebles** and the **Dick Phillips**, each of whom have three. Honors for the most children (seven) went to the **John Scheurens** and for the youngest child (three years) to the **Yicka Herberts**. If any of the absent members can tie or top these records, I suggest they send me the details.

Upon completion of the business meeting, Dr. Harold Edgerton, '27, entertained us with his high-speed photography films, including some of his early films which have not been very widely shown in public. Dr. Edgerton's talk was followed by a showing of slides and movies taken at prior reunions. At the rate these pictures are accumulating, their showing will require a full day at our 50th reunion. On the other hand, by our 50th reunion we may not want to do much else but sit and look at pictures.

Scotty Scott was kind enough to bring with him, and demonstrate to us after the movies, one of the finely crafted hi-fi systems his company produces. As many of you doubtless know, H. H. Scott, Inc., is a leading manufacturer in this field. Your reporter, being a chemist, is abysmally ignorant of matters elec-

tronic, and therefore is unable to describe this equipment in detail. However the overall effect was very pleasing.

On Sunday, the weatherman relented and all sports were pursued with vigor. It was even rumored that there were a number of swimmers, although I cannot vouch for this fact except on the basis of hearsay and such circumstantial evidence as the amount of sea food that was consumed at the clambake which was provided for us at mid-day. Tom O'Connor was again called on to give out the sports prizes which were scheduled for presentation at the end of the clambake. The golf scores, for the most part, indicated that our classmates have been diligently applying themselves to the business of earning a living; there was little evidence that they have been spending an excessive amount of time on the golf course. However, all generalizations have exceptions, e.g. **Hank Bates'** very respectable low gross of 88. To **Joe Preble** went an award for what was somewhat euphemistically characterized as the "most honest" golf score. Taciturn **Bill Wye** was on the receiving end of a gently needling award for loquacity.

Since many of those present had substantial distances to travel, the group dispersed quite promptly after the clambake. Terminal conversations were liberally sprinkled with complimentary comments concerning the fine job done by co-chairmen **Kingsley** and **Gassett** and committee members **Harrington**, **Herbert**, **O'Connor**, and **Starratt** in planning and carrying forward the reunion program.—**Gordon K. Lister**, Secretary, 530 Fifth Ave., New York 36, N. Y.; **Ralph W. Peters**, Assistant Secretary, 249 Hollywood Ave., Rochester, N. Y.; **Louise Hall**, Assistant Secretary, Box 6636, College Station, Durham, N. C.

'31

This year the summer seems to have passed faster than ever. All of your class officers hope that you enjoyed it and are looking forward to our 30th reunion at the beginning of next summer. **Hal Gurney** has been elected General Chairman of the 30th Reunion Committee and the reunion will be held at the beautiful Wianno Club, Wianno, Cape Cod. Your committee has booked the facilities of the entire club—swimming, golfing, riding, fishing, etc.—which has a capacity of 125 plus accommodations for an additional 25. Let's have a big turnout.

A letter from **Ralph Davis**, dated July 6, from the Liberté en route to Paris, France, says—"Last week I sailed from New York on the Liberté with my family for a six weeks' trip to Europe. We arrive at LeHavre this evening. Tomorrow we will pick up a Peugeot for our tour through France, Belgium, Holland, Germany, Switzerland and back to France where we will turn in the car and take the night train to London. We'll have a few nice days there during which time I will have an opportunity to visit our English correspondents and Lloyds famous coffee shop and room. It should be a

memorable trip as we plan to see the Passion Play at Oberammergau and climb the Jungfrau—via railway."

Carl F. Baker has been named quality manager at Chandler Evans Corp. He was formerly chief engineer of the Hamilton Standard Division of United Aircraft Co. Carl's present address is 53 Rumford Street, West Hartford, Conn. . . . **Gordon Brown** has accepted an appointment as a member of the Advisory Committee of the Coast Guard Academy. . . . **Leonard Christie, Jr.** has been named product manager, technical sales, of the Babcock & Wilcox Company's refractories division. . . . **Emilio Collado** has been elected to the Standard Oil Company's Board of Directors. . . . A publicity release received from the Alumni Office tells that **Ed Ducayet** is now president of Bell Helicopter Company. Ed joined Bell in 1950 as assistant to the vice president in charge of the helicopter division. . . . An announcement in the Jewish Advocate of Boston tells of Col. **Irving Finberg's** return to Tech to assume the post of Professor of Military Science and Tactics for the Institute's Army ROTC Unit. Irving holds the Legion of Merit, the Order of the British Empire and the Italian Cross of Valor for distinguished service in planning and executing engineer supply operations in the Italian campaign during World War II. . . . **Bill Jacobs**, our Class Treasurer, had quite a write-up in the Boston Sunday Globe on July 17. It told of his career as Jet Spray's president, and the development of Jet Spray and the Chocolate Dispenser (Magic Whirl Chocolate Maker and Dispenser). . . . A publicity release tells that **Claude Machen**, our Class Vice President, has been elected to the Board of Directors of Boston Gas Company. . . . Dr. **Denis M. Robinson**, President of High Voltage Engineering, announced that his company has acquired all of the stock of Applied Radiation Corporation. . . . Another release bearing a March date, but just received, announces that **Don Sinclair** has been appointed executive vice president and technical director of General Radio Company. . . . Last but not least, word from our reliable Alumni Office tells that **Lombard Squires** has been named manager of the Atomic Energy Division of the Explosives Department of DuPont.

The Class of '31 was well represented on Alumni Day by Larry and Mrs. Barnard, Wyman and Mrs. Boynton, Gordon and Mrs. Brown, John Caulder, Vincent and Mrs. Damiano, Ralph and Mrs. Davis, Irving Finburg, Hal Gurney, Ed and Mrs. Hubbard, John and Mrs. Long, Claude and Mrs. Machen, and Al and Mrs. Pierce.

It is my sad duty to report the death of **Mrs. Margaret C. Hassett** on Feb. 27, 1960, and Rear Admiral **George C. Weaver** on March 4, 1960. We have no details.

Address changes reported since my last letter are as follows: **Harvey B. Alexander**, Box 194, Indian Head, Md.; **Arthur D. Bertolett**, 314 Friendship Dr., Paoli, Pa.; **Walter C. Bodycomb, Jr.**, 220 E. 33 St., Joplin, Mo.; **George Cohen**, 15 Carling Rd., Framingham, Mass.; **Dr. Albert H. Cooper**, P. O. Box 445, Storrs, Conn.;

Harland A. Danforth, Jr., 1617 White Oak Street, Costa Mesa, Calif.; **Stewart M. Davis**, Hohenzollerstr 61, Munich 13-066 Deutschland; **William G. Dodge**, 19 Smerdon Hawkesbury, Ont., Canada; Dr. **Paul H. Doleman**, Tufts College, Medford, Mass.; **Frederick C. Eaton, Jr.**, P. O. Box 104, Seroe Colorado Aruba, Neth. Antilles; **Mrs. Ruth P. Fuller**, The Breakneck Road, Hulls Cove, Maine; **Antonia Galvache**, Empresa Nacional, Basan, Cartagena, Spain; **Darius W. Gaskins**, Box 156, Route 1, Great Falls, Va.; Rear Adm. **Cato D. Glover**, 1904 No. Broad St., Camden, S. C.; **Clifford A. Harvey**, Fiske Hill Rd., Sturbridge, Mass.; Dr. **Laurence C. Hicks**, Allegheny Ludlum Steel Corp., Brackenridge, Pa.; **Donald A. Holden**, Newport News Shipbuilding and Dry Dock Co., Newport News, Va.; **George V. Kropp**, 30 Ministerial Branch, Bedford, N. H.; **Eugene J. Lowrie**, Chevrolet Engineering Center, 30003 Van Dyke, Warren, Mich.; **William C. Mentzer, Jr.**, United Air Lines, Inc., International Airport, San Francisco, Calif.; **Doyle L. Northrup**, AFTAC, Pentagon, Washington 25, D. C.; Dr. **Bryce Prindle**, Main Street, Sherborn, Mass.; Col. **Chas. Robbins**, Chem C. Mat. CMD, Army Chem. Center, Md.; **William H. Roberts, Jr.**, Mgr. of Special Projects, Allied Chemical Corp., 40 Rector St., New York 6, N. Y.; **Albert R. Sims**, 535 Main St. W. Concord, Mass.; **Richard C. Tucker**, Hercules Powder Co., Radford Arsenal, Radford Va.; **Henri B. Turner**, 20 Hadley St., Malden 48, Mass.; and **Alfred D. Vincent**, E. I. DuPont de Nemours Co., Starke, Fla.—**Edwin S. Worden**, Secretary, 6 Murvon Court, Westport, Conn.; **Gordon A. Speedie**, Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.

'32

Alumni Day brought some of the members of our class together for our Annual Luncheon. Those present included: James D. Abbott, X; Wendell E. Bearce, III, and wife; Charles B. Bradley, VIII, and wife; John J. Brown, X; Albert W. Dunning, II, and wife; Lester Glickman, X; Francis T. Gowen, IX, and wife; Arthur Lowery, VI; Miss Katharine A. Lyons, VII; Robert E. Minot, IV, and wife; Frederick J. Powers, VIII; Harry Shwachman, VII, and wife. In addition, Ed Nealand, V, and I, joined the group.

There are a couple of noteworthy promotions among our classmates. **Chippy Chase**, VIII, has been appointed assistant to the treasurer of Union Carbide Corporation in New York City. He has been with this company since 1939. . . . **John W. McCoy**, XG, has been appointed general manager of the Explosives Department of DuPont in Wilmington. Formerly he was General Manager of the Elastomer Chemicals Department. He has been with DuPont for the last 28 years. The question I ask is, "How can anybody as young as we are have been with a company for 28 years?" . . . **Harner Selvidge**, VI-A, has been appointed vice president and general manager of Meteorology Research Inc., of Altade-

na, Calif. He was formerly Western Corporate representative of Bendix Aviation. In addition to his new work with the research and instrumentation company, he is also president of the Soaring Society of America.

Major General **Thomas A. Lane**, I, of the Corps of Engineers has been transferred from his post as commanding general of the U.S. Army Training Center at Fort Leonard Wood, Mo., to Vicksburg, Miss. He will now serve as division engineer for the Lower Mississippi Valley and president of the Mississippi River Commission. We have so many Army officers on our roster that I should like to hear more about their activities. Please report your latest assignments.

Frederick R. Henderson, XV, is a teacher at Northeastern Junior College in Sterling, Mass. During the past summer he attended the Summer Institute of Mathematics at Clark University in Worcester. He had received a grant from the National Science Foundation along with about 50 other mathematics teachers. The major aim of the program was to broaden and deepen the mathematical background and professional competence of these specially selected teachers.

Many of you will be hearing from representatives of the Second Century Fund. At the recent Leadership Conference held at Tech in September, **George K. Kerisher**, **John Lawrence**, and **Bob Semple** were present. These are men who will lead the drive for big gifts. All of us will be tapped in one way or another, but I hope that we can keep up our contributions and good record in the Alumni Fund at the same time.—**Rolf Eliassen**, Secretary, Room 1-138, MIT.

'33

Greetings to all of you at the beginning of the new year. Honors for the month go to **Robert H. Winters**, VI-A. Bob is the first member of the class and the second Canadian to be elected to the M.I.T. Corporation. Bob has also accepted the chairmanship of the board of governors of York University, Ontario's 10th university, to set up the appointment of a president and principal for the new university, after which a permanent board of governors will replace the temporary board.

We commend also, **Forrest P. Dexter, Jr.**, IX-A, who is a faculty member at Union Junior College in Cranford, N.J. Forrest is the first representative of a junior college to head for a four-year term a subcommittee of the Committee on Examinations and Tests, Division of Chemical Education, of the American Chemical Society. He was elected chairman for the general chemistry test, which is taken by college freshmen all over the U. S. Forrest has been teaching chemistry and geology at Union since 1945, prior to which he was a research chemist with Tidewater Associated Oil Company in Bayonne, and Calco Chemical Co., in New Haven.

We report with pleasure that **Alexander J. Minkus**, XI, has been named chair-

man of the New England section of the American Water Works Association. He is an executive engineer with the MDC and responsible for its water purification operations serving some 370,000 in the Greater Hartford area.

We regretfully report the following deaths: **Khalil Fannoney**, II, of Boston; **Lawrence H. Huron**, XVI, of Locust Valley, N. Y., January 22, 1960; **William E. Soule, Jr.**, XVI, of Natick, Mass., on June 20, 1960; Col. **George K. Withers**, II, of Atlanta, Ga., on May 3, 1959.

Congratulations to **Paul F. Genachte**, VI, who has been promoted to vice president of the Chase Manhattan Bank. He will become chief marketing officer for the international department and will supervise the bank's activities in connection with the European Common Market and Free Trade Association. Paul will also continue as head of the bank's atomic energy division. . . . Hats off, too, to **Frederick V. Murphy, Jr.**, XV, who has been elected a director of Attleboro Electric Co. Fred is president and treasurer of Standard Plastics Co., and is a trustee of Sturdy Memorial Hospital and the Attleboro Public Library; a director of the First National Bank of Attleboro, YMCA, United Fund, Society for Prevention of Cruelty to Children, and the Society of the Plastics Industry. . . . During the summer we had an amusing card from **Beaumert H. Whitton**, XVII, with the message, "Beau rocking on the front porch . . . think I will vacation more often." . . . **Athel Spilhaus**, XVI, was on TV last spring on "The Twentieth Century", narrating "The Power of the Sea," Part I of *The Mysterious Deep*.

Melville Ehrlich, V, stopped in to see us in August while visiting relatives in the Boston area. His younger son is entering Oberlin this fall, with a major in music. He spent last summer with an Oberlin musical group on Cape Cod. Mel's older son is a junior at the University of Buffalo, majoring in geophysics and chemistry. . . . By coincidence we had a brief but most pleasant visit with **Charlie Britton**, XV, and his attractive wife, Fran, on Labor Day. Charlie looks as young as ever. His older daughter recently married Bill Taggart, son of Bill, Sr., class of 1927. . . . We report with pleasure that **Leslie S. Fletcher**, II, former army colonel and West Pointer, is now director of the American Society of Tool & Manufacturing Engineers Research Fund. The Fund is an independent activity of ASTM dedicated to applied basic research in the tool and manufacturing engineering field. He directs a variety of research programs placed under contract to universities, research labs and libraries. Les is a resident of Birmingham, Mich. . . . We had a letter from **John D. Rumsey**, III, who had a very interesting trip a year ago through Western Europe for over a month, where they have "some very novel material handling installations, all the way down to the century old manual method of conveying materials."

Arthur C. Ruge, I, broke into the news from the Electronics and Instrumentation Division in Waltham, Mass., of Baldwin-Lima-Hamilton Corporation, where the

highest capacity dead weight testing facility in the world for calibrating load cells is under construction. Art is director of research and development there and says that the actual ultimate limit of precision of load cell calibration with the new facility will be governed only by the accuracy and readability of the electrical readout instrumentation. The facility will give a boost to the missile and space program. . . . We have received the following changes of address: **Frank J. Bleil**, VI-C, from Babylon, N. Y., to Delano, Calif.; **William W. Pleasants**, I, from Wynnewood, Pa., to Anchorage, Alaska; **William E. Potter**, I, from Balboa Heights, Canal Zone, to Office of Chief of Engineers, Department of the Army, Washington, D. C.; and **Charles R. Watts**, XIII-A, has moved back to Alexandria, Va., from Niagara Falls, N. Y.

Congratulations to our much honored **Richard S. Morse**, VI, Director of Research and Development for the Department of the Army, who received an honorary Doctor of Science degree from Clark University. . . . A major change of geography for **Ivan A. Getting**, VIII, formerly Vice President for Engineering and Research at Raytheon, who has become president of The Aerospace Corporation in El Segundo, Calif. Aerospace is a non-profit company performing engineering and management functions for advanced missile and space projects of the Air Force. . . . News again of **Rodney D. Chip**, VIII, with a report on his "Project Ambassador" trip in June at the N.S.P.E. meeting in Boston. Rod has made frequent trips to Mitre this summer. He is now back in New Jersey as Director of Engineering Planning for I.T.&R. Labs. . . . **Edward S. Goodridge**, VI, is going strong, as we knew he would, as President of the M.I.T. Club of New York. Among other innovations, Ed is making a survey on whether an investment group should be formed by the Club.

It was wonderful being visited by some of you and hearing from others this summer; I know there are a lot more of you who had interesting vacations or are doing interesting work which we'd all like to hear about. Let's have it!—**R. M. Kimball**, Secretary, Room 3-234, M.I.T., Cambridge 39, Mass.

'34

The summer months have brought in a rash of news items:

Raymond W. Ferris died on June 13. He graduated from Dartmouth, Class of 1933, and was associated with our class through his graduate work in Course XV. He was manager of contracts at the Fore River Plant of the Bethlehem Steel Co. He is survived by his wife, Phyllis, and two sons.

Brief notes from here and there: **Ernest J. Greenwood** has been made operations manager in the Norden Division of the United Aircraft Corporation. . . . **John G. Callan** is now research director with the Knox Company of East Walpole, Mass. . . . **Paul Wing, Jr.** is now man-

ager of engineering for Mason-Neilan Division of the Worthington Corp. in Norwood, Mass. . . . **Donald F. McNaught** is the new superintendent of an expanded Drafting Division at the Fore River Plant of the Bethlehem Steel Co. . . . Captain **Victor B. Cole**, USN (Ret.) has become an assistant professor of engineering at the University of Hartford, in Connecticut. . . . **R. G. Murdoch** is now assistant sales manager for the Buffalo Division of Texaco, Inc. . . . **Thomas L. Apjohn** is manager of the Additives Department in the Paint and Special Products Division of Mobil Chemical Company, a new operating division of Socony Mobil Company. . . . **William C. Allen**, former director of manufacturing for I.T.&T. Corp., has joined Haloid Xerox, Inc. as vice president in charge of machine manufacturing.

This secretary would be interested in learning the whereabouts of **Bertram Hullmuth**, not listed in the usual alumni records, although associated with our class for a brief period.

Alumni Day this last June 13 was, as usual, a big day but not of special interest to our class. Fifteen classmates and about ten wives attended. Mr. and Mrs. **James H. Burke** attended after having been overseas for several years and, hence, unable to attend our 25th.

The Institute is grateful to the 11 members of our class who are active as leaders in the successful regional Alumni Fund Program. They are: **C. B. Gamble, Jr.**, Birmingham, Ala.; **S. Untermeyer**, San Mateo, Calif.; **F. J. Brazel**, Darien, Conn.; **J. E. Leininger**, New Orleans, La.; **J. A. Pekin**, Marblehead, Mass.; **H. W. McKeague**, Lansing, Mich.; **N. Poffenberger**, Midland, Mich.; **J. V. Salo**, Manchester, N.H.; **E. C. Taylor**, Portsmouth, N.H.; and **H. C. Leighton**, Hamilton-Middletown, Ohio.—**Malcolm S. Stevens**, Secretary, Room 20B-131, M.I.T.; Other Secretaries, **James P. Eder**, 1 Lockwood Rd., Riverside, Conn.; **G. Kingman Crosby**, Longwood Rd., Huntington, W. Va.; **Harold E. Thayer**, 415 W. Jackson, Webster Groves 19, Mo.

'35

Even though our 25th Reunion will have been five months past by the time you read this, these notes would not be complete without a brief recap. First of all, tremendous credit is due **Walter Stockmayer** and his Reunion Committee for the excellent job done. **Prescott Smith's** arrangements for 76 sons and daughters in attendance proved a real pleasure to them as well as their parents. A tour of Boston filled two buses on Sunday afternoon with those from out-of-town as well as some Bostonians seeing its historical sights for the first time. At our class business meeting **Jack Colby** turned over his gavel after 15 years of hard work as class president. We owe him many, many thanks for his efforts and those of the other retiring officers including: **Henry King**, Vice President, **Francis Muldowney**, Secretary and **Ernest Van Horn**, Treasurer. Officers se-

lected to serve until our next reunion include: **Leo Beckwith**, President, **Bernie Nelson**, Vice President, **Randy Antonsen**, Treasurer, plus the Secretariat listed at the end of these notes. Largely through the efforts of a dedicated few led by **Dick del Etoile**, Chairman of the Class Gift, and **Bill Abramowitz**, Special Gifts Chairman, 34% of our class put together a record-breaking 25 year gift to MIT of \$150,000. A tremendous effort of lasting value to all of us is the Class Book prepared by **Ham Dow** and his committee of **Irving Banquer**, **George Forsburg**, **Art Marquardt** and **Cason Rucker**. A little co-operation from the three hundred of you who have not yet sent in your biographies is calculated to keep 1935 in the class notes for years.

Gerry Rich reports: "A few of us West Coast 35'ers got back to reunion last June, and, for the information of those who missed it, it was worth the trip. Of course, most men looked like their own fathers, when compared to the 1935 Technique, but they weren't acting any older. The efficient and well-stocked bar helped considerably in this connection since it was closed only between the hours of 4 a.m. and 10 a.m., probably for the purpose of restocking and a change of bartenders. The fellows from California couldn't claim the longest trip back to the reunion but possibly the penultimate. The bouquet went to **Bill Dunn** who came from Hawaii with his family.

This correspondent has been beating the bushes lightly in the area to get information on your West Coast classmates for this column. Most of the effort has been singularly unsuccessful because those who are within telephone distance have been (a) on business trips (b) on vacation (c) without a listed phone (d) in hiding. However, if they will answer their mail, we should have a good harvest in the future. One contact was made, however, with **Tom Chuck**, course 1V-A. He is living at 1567 Clay St., San Francisco 9, Calif. Tom is married and has three grown children now out in the world. Tom seems to have made a number of long moves before settling in San Francisco. He was in China when the Japanese moved in during World War II, and then he returned to the U.S. After the war he went back to China and returned to the U.S. again when the Communists took over. Forsaking his architectural field, he has since formed a partnership and is an importer of objets d'art, antiques and furniture.

Another Course 1V-A man, **Avon Pitman** now lives at 912 S. Federa, Los Angeles. Formerly from Chelsea, Avon moved to California in 1948 and has been there ever since. He established his own architecture business at the time of his arrival in the West and has been doing very well. He is concentrating on the residential and apartment house field in the fastest growing section of our country. Avon says his feeling of isolation from the rest of the Institute was shared by many of his 1V-A classmates and probably accounts for the few biographies from architects.

Karl Andrew, 18-year-old son of **Karl H. Achterkirchen**, 3292 Goodland Ave.,

North Hollywood, California, is entering MIT's Class of 1964 after graduating from North Hollywood High School with honors. Karl Senior is a Project Engineer at Lockheed where he has been located since 1940.

Oscar Hakala, our District Secretary from Southern California, reports he has some excellent pictures taken at reunion and will be glad to show them to anyone who contacts him: Office at Norair Division where he is a data processing analyst, OR 8-9111, Extension 2123; or home, 11536 So. Cimarron, Los Angeles, PL 6-0253.

Bob Olsen, our District Secretary from Central Pennsylvania reports through **Hal Bemis** that he has just completed his first Industrial Seminar at Penn State with participants from most of the major companies in the East. He writes: "The Industrial Engineer is beginning to feel the impact of mathematical management techniques, computers, and the like. We gave those present a picture of what the Industrial Engineer will be doing in ten years. Industrial Engineering is moving so rapidly that the work being done by Industrial Engineers today will be done by technicians ten years from now. The Aeronautical Engineers have their wind tunnels, the Navy boys their water tunnels, and now finally, the Industrial Engineer is also about to simulate actual factory conditions with the Monte Carlo simulation technique plus digital computers. Eastman Kodak is way ahead of the other big companies, believe it or not. (I hope someone challenges me on this one!) As for my family, my oldest son is in the Navy in San Diego (USNTC), the middle boy will be playing varsity high school football this year, and the youngest is still having fun!"

Next month we will not only have news from more of our classmates, but details of the far-reaching "organization" being set up by the five newly elected secretaries, and how you can participate. These regional secretaries are: **Edward C. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis**, 510 Avonwood Rd., Haverford, Pa.; **Elmer D. Szantay**, 6130 N. Kilbourn Ave., Chicago 16, Ill.; and **Gerald C. Rich**, 673 Rosita Ave., Los Altos, California.—**Allan Q. Mowatt**, Class Secretary, 11 Castle Road, Lexington 73, Mass.

'37

At Alumni Day last June our class was represented by Ed Hobson, Cliff and Betty Lytle, John Nugent, Phil and Ruth Peters, Curt Powell, Bob Thorson, and Walt and June Wojtczak. The main topic of discussion was the location for our 25th reunion. The Institute has made it very attractive to hold an on-campus reunion, especially in regard to the cost. Many still prefer Oyster Harbors. The reports from the previous classes, which in the last few years have all held their 25th reunions on campus, show that they had a wonderful time and that the children also enjoyed themselves. The children had their own supervised program and were kept busy every minute.

Phil Peters was chairman of the Alumni Day Committee and he and his committee can be proud of their work. It was a thoroughly enjoyable day. Phil is now vice-chairman of the Second Century Fund.

Al Blank is director of research at Chase Brass and Copper Co., Waterbury, Conn. . . . **Gil Mott** is vice-president and director of engineering at Bridgeport Brass Co. and lives in Fairfield, Conn., with his wife, Rosemary, and their 3 children. . . . **John Pitkin** has been named the European F-104 project director for Lockheed Aircraft Corporation, with headquarters at Koblenz, Germany. John has been Quality Assurance staff manager at Lockheed's California division.

Leo Moore, Associate Professor at M.I.T.'s School of Industrial Management has been awarded the 1960 Gilbreth Medal of the Society for Advancement of Management. . . . **Dr. Albert Hall**, Director of Research and Engineering for the Martin Company has been named vice president of engineering. . . . Major General **James McCormack**, USAF (Ret.), Vice President of M.I.T., spoke at the ROTC commissioning ceremony for seniors completing Army, Navy and Air Force studies at Harvard last June. . . . Colonel **Joe Smedile** has just completed a ten month course of study at The Army War College, Carlisle Barracks, Pa.—**Robert H. Thorson**, Secretary, 506 Riverside Ave., Medford, Mass.; **Prof. Curtis Powell**, Assistant Secretary, Room 5-323 M.I.T., Cambridge, Mass.; **Jerome Salny**, Assistant Secretary, Egbert Hill, Morristown, N.J.

'38

To start the new season we have a variety of news items concerning members of the class. First of all we have notice of a wedding in April of Stanley Walter and Miss Dorothy Helen Daly. Stanley is with Air Reduction Co., New York. Mrs. Walter is a graduate of the Connecticut College for Women. . . . Without other detail we also have word of the death of **Frank Moy**.

A news article recently discussed the first religious architectural award granted by the Boston Arts Festival. Made to Temple Reyim, Chestnut Hill, Mass., the award is of interest to our class since **Sol Kaufman** is president of the temple.

The U. S. Department of Commerce has announced that **Ralph Slutz** will spend a year at the Max Planck Institute for Physics and Astrophysics at Munich, Germany. Ralph has served as chief of the Radio Propagation Physics Division at the National Bureau of Standards' Boulder Laboratories. His work has included serving on the U.S. IGY technical panel on ionospheric physics and on a committee concerned with problems of exchange of data gathered by IGY.

We have representation in the "authors and speakers" department. **Edward Maguire**, chairman of the Haverhill, Mass., board of health spoke on "Community Health" for the benefit of one of the local schools. He is president of the William A. Maguire Chemical Co. . . . **Gurdon But-**

ler, director of research for Gladding, McBean & Co., Los Angeles, has had a paper, "Silicon Carbide for Nuclear Reactors" published by the American Ceramic Society *Bulletin*.

A number of promotions has been announced. **Gordon Hunt** has been appointed assistant director of research and development for the Torrington Company. Except for a period between 1947 and 1951 Gordon has been with the company since he left the Institute. . . . **Frank Amos Knight** has been named division manager of the Eastern Fine Paper and Pulp Division of Standard Packaging Corporation. . . . **Jack Wilber** has been appointed assistant to the director of manufacturing for Norton products with Norton International, Inc., of Worcester, Mass. . . . **John Snuggs** has become a division director at the Whitney research laboratories of Standard Oil Company (Indiana).—**David E. Acker**, Secretary, Arthur D. Little, Inc., 1424 Fourth St., Santa Monica, California.

'39

For this kickoff set of notes for the 60-61 Review year, I'm going to be especially terse, following a request from Review headquarters to be brief because of additional work required in changing printers. To be obliging, I'll simply state that during the summer, much material for notes has accumulated, and that you can look for news of classmates starting with the next issue.

Here's what's in store for you: A fine letter from Irving Peskoe, of 1000 N. Krome Ave., Homestead, Fla. . . . News releases concerning Herbert A. Finke, Richard S. Leghorn, Howard H. Reynolds, Jerome Gross, Henry R. Landwehr, Edwin M. Tatman, Norris F. Dow, Benjamin W. Badenoch, and Marshall Wren Gabel. . . . News gleaned from thirty-niners who attended Alumni Day at M.I.T. on June 13: John F. Allen, George W. Cannon, Robert Casselman, R. Wade Caywood, A. Laurie Fabens, John H. Howard, Stanley C. Johnson, Clinton C. Lawry, Simon M. Roberts, Robert J. Saunders, George A. Schroeder, Seymour J. Sheinkopf, Aaron White, William F. Wingard, Ernest R. Kaswell, and the undersigned. At least, those are the men who had registered and whom I saw at either the lunch or dinners. If I've missed anyone, please let me know, and send along a short letter of your current accomplishments or those of your family. That invitation is extended to all other classmates, of course, echoing the ageless plaint of class secretaries. We can't write effectively unless you do so first!—**Oswald Stewart**, Secretary, 31 Birch Road, Darien, Conn.

'40

The 20th Reunion was a great success as was agreed by the more than 120 people attending the festivities at the Chatham Bars Inn. New class officers were elected as follows: **Frank Penn**, Presi-

dent; **Bob Bittenbender**, Vice-President; **Alvin Gutttag**, Secretary-Treasurer; **Sam Goldblith**, Assistant Secretary-Treasurer.

Quite a few classmates filled in the questionnaire at the Reunion. Further information obtained from this will be forthcoming in subsequent notes. One vital statistic which is of interest is that the average number of children per classmate is approximately 3.3 and presumably the final results have not yet been tabulated.

It is with regret that I must include in this column the report of the death of three classmates. Captain **George M. Phannemiller** of the U.S. Coast Guard Academy died June 23, 1960. We are indebted to the Norwich, Conn. *Bulletin* for a summary of George's activities. He was appointed assistant superintendent of the Coast Guard Academy in March, 1957, and held this position at the time of his retirement on February 2, 1959.

"Capt. Phannemiller was head of the engineering department at the academy from July, 1954 until he was appointed assistant superintendent. He was a native of Patchogue, L.I. He was a veteran of 32 years of commissioned service in the Coast Guard. Considered one of the Coast Guard's leading marine engineers, before reporting to the academy in 1954, he was chief of naval engineering division at Coast Guard headquarters during the designing, constructing and testing of several new classes of vessels including the 95-foot patrol boat. The Society of Naval Architects and Marine Engineers honored him in 1954 for what the society termed 'an outstanding paper' which he prepared on modern design and construction methods as applied to the 95-foot cutter. He became a cadet in 1924 following two years of study at Columbia University. He was commissioned in 1927 and served on destroyers based here and in Boston until 1930. He served on the cutter *Sebago* from her commissioning in 1930 until 1932, when he began serving as the captain of the port office in New York. He later initiated the personnel division of New York district of the Coast Guard.

"In October 1934, he was navigator of the cutter *Yamacraw* at Savannah, Ga., and in 1935 was aboard the cutter *Modc*. He was awarded a Master of Science degree in Marine Engineering from M.I.T. in 1940, following two years of study at the Naval Post-graduate school and at M.I.T. During World War II, Capt. Phannemiller served for two years aboard the cutter *Spencer* in the North Atlantic anti-submarine patrol. After a short period at Boston, he was assigned to the Academy as an engineering instructor and public relations officer. While here he initiated the SPAR officer training program and served as its director until the program ended in November, 1944. He continued to serve at the academy as a naval engineering instructor until August, 1946, when he was transferred to the Third Coast Guard District office as district engineer. Capt. Phannemiller left that post to assume command of the cutter *Spencer* for one year until 1950, when he went to headquarters as chief of the naval engineering division. In 1932 he

married the former Agnes W. Wadleigh of New London."

Miss **Carolyn W. Farnsworth** died May 9, 1957, and Miss **Theda W. Waterman** died on March 15, 1959.

Jean Lewis has been appointed plant superintendent of the Eli Sandman Company. . . . **Ed Cooper** received an honorary Doctor of Science Degree from Berea for "one whose efforts result in new applications of scientific knowledge in industry and in economics and in new materials for the use of people for the enhancement of life." Ed is general director of the Polychemicals Department, Research Laboratory of DuPont's Experimental Station near Wilmington, Del. . . . **Ed Fettes**, who was formerly director of research and development for the Chemical Division of Thiokol is now manager of the Plastics Section of Koppers.

Monte Hearon has been promoted to the newly established position of vice-president for research and development of Crown Zellerbach. . . . **Julius Molner**, who is president of the Sandia Corporation, and vice-president of Western Electric, has been elected a vice-president of Bell Telephone Laboratories.

. . . **Fred Hammesfahr** is now director of the Commercial Development Department of J. T. Baker Chemical Company in Phillipsburg, N.J. Previously, Fred had been with Pittsburgh Consolidation Coal.

. . . **Vincent Cling** recently sent your correspondent a copy of "Corinthian Columns", the interesting newsletter published from time to time by the architectural firm of which he is the head. . . .

Ed Harris has been promoted to assistant chief engineer of United Aircraft Corporation's Norden Laboratories Division. Previously, he was head of the television department. . . . **Stanley Stookey** was awarded the Ross-Coffin Purdy award for writing the most valuable contribution to ceramic literature. Dr. Stookey, who is associated with Corning Glass Works, received the award for his work on Pyroceram and an explanation of nucleation in the book *Ceramic Fabrication Processes*.

The most recent inventor in the class is **John Burnell** of General Motors who is the co-inventor of Patent 2,915,914 for an idle speed control device. . . . **Peter Park** is the secretary-treasurer of the newly re-organized Wind Turbine Company. The company is in the field of engineering of antenna systems and the manufacture of radio and television transmitting towers and related equipment. . . . **Frank Shackelford** has been appointed assistant manager of the Chicago District Sales Office of DuPont's Dyes and Chemicals Division. Frank has recently returned to the United States after an assignment with DuPont's Mexican subsidiary.

We had a good attendance on Alumni Day as the following list bears witness: Mr. & Mrs. James L. Baird, Mr. & Mrs. Robert A. Bittenbender, Mr. & Mrs. W. Kenneth Bodger, Mr. & Mrs. Harry N. Cottle, John L. Danforth, Mr. & Mrs. Harlan H. Davis, Mr. & Mrs. Jorge Echarte, Mr. & Mrs. J. B. Feldman, Mr. & Mrs. Milton Green, Mr. & Mrs. Alvin

Gutttag, Mr. & Mrs. Russell L. Haden, Edith Cameron Kingsbury, Edward J. Kingsbury, Mr. & Mrs. James H. Moore, Mr. & Mrs. Rowland H. Peak, Mr. & Mrs. Franklin E. Penn, Mr. & Mrs. Edward G. Pollak, Mr. & Mrs. Richard G. Robertson, Abraham P. Rockwood, Philip A. Stoddard, Mr. & Mrs. M. Arnold Wight, Jr., Mr. & Mrs. George M. Wolfe, Walter H. Farrell, Mr. & Mrs. Walter Helmreid, Mr. & Mrs. Garrett Inright, Mr. & Mrs. Edward M. Fettes, and Mr. & Mrs. David R. Goodman.

With our 20th Reunion behind us, it is now time to make preparations for the Class Gift which will be presented on the occasion of the 25th anniversary of our graduation from Tech. If you contributed only \$5.00 a month over the next five years, it would amount to a contribution of \$300.00, so start saving your pennies, or if you prefer, make regular monthly contributions to the Alumni Fund.—Alvin Gutttag, Secretary, Cushman, Darby & Cushman, American Security Bldg., Washington 5, D.C.; Dr. Samuel A. Goldblith, Asst. Sec., Dept. of Food Tech., M.I.T., Cambridge, Mass.

'41

REUNION REMINDER! The 20th Reunion of the Class of 1941 will be held June 9 through 11, 1961, at the Bald Peak Colony Club on Lake Winnepesaukee, N.H. You will be hearing more details directly from the Reunion Committee; be sure to save the dates for another weekend of merriment, food, sports, reminiscing, and comparison of diminishing airlines and expanding waistlines.

Almost the entire summer mail bag has been made up of news of promotions or changes in position. It is always a pleasant task to list them and to offer our best wishes for continued success.

Don Scarff has been named general manager of General Electric's Large Lamp Department in Cleveland. Don has been with GE since graduation, and since 1946 has been in lamp sales work. Married, with two children, he has been in Oakland, Calif., for the past five years. . . . **Walt Kreske**, President for the past year of the Massachusetts Society of Professional Engineers, was honored by a citation from the officers and directors of MSPE which paid tribute to his "distinguished service in advancing the aims, ideals, and development of the engineering profession." Walt has been active in the Newton, Mass., Little League, and president of the Samuel Francis Smith Homestead Society, and is chairman of the Legislative Affairs Committee of the National Society of Professional Engineers, as well as being a successful patent counsel in Boston.

John Stern, a member of the engineering staff of United Air Lines since 1946, has been appointed the company's European factory representative, stationed at the plant of Sud Aviation in Toulouse, France. He will direct liaison work with both Sud Aviation and Rolls-Royce in Derby, England. United recently ordered 20 Rolls-Royce-powered Caravelle jet

airliners from the French firm. John had previously been new aircraft coordinator at United's maintenance base in San Francisco. . . . **Don Knott** has been named manager of industrial chemical development in the Chemical Sales Division of Charles Pfizer and Co. He has been with Pfizer since 1954, having previously worked in the development section of the technical service department. Prior to that, he served for seven years with the Hanford Atomic Energy Plant, operated by General Electric at Richland, Wash. He is married and has four children. . . . **Charles Wales** has been appointed a superintendent of the Bound Brook, N.J., plant of Union Carbide Plastics Co. Following service with the Army Chemical Corps, he joined UCC at South Charleston, W.Va. He was most recently assistant plant manager in charge of vinyl and polyethylene resin operations at the Texas City plant. . . . **Frank Kolk** has been elected an assistant vice-president of American Airlines, with responsibility for the engineering research and development division. He will be responsible for aircraft preliminary design, technical staff support related to new aircraft, research and development of systems and components, and general engineering staff support. He has contributed the major design concepts for a number of new airliners, including the forthcoming Convair 990 jet transport.

Gene March has been appointed director of metallurgy for the Crucible Steel Co., in Pittsburgh. Starting with the firm in 1946, he has held positions as metallurgist, chief works metallurgist, and assistant works manager. He is married and has two children. . . . **Carl Oldach** has been named assistant general manager of duPont's organic chemical department. He was previously director of sales of the Freon Products division, and has held a succession of technical and supervisory posts since joining the company after graduation. . . . **Frederick Martin** has been appointed a liaison scientist at the General Electric Research Laboratory, responsible for maintaining a two-way flow of information between the laboratory and the rest of the company, specifically in the field of chemistry. Before joining G.E. in 1954, he served with the M. W. Kellogg Co., the Ohio State University Research Foundation, the Los Alamos Scientific Laboratory, and the Explosives Research Laboratory, National Defense Research Council, specializing in detonations and shock phenomena. He is married and has three children.

Burnham Kelly, formerly Associate Professor of City Planning at M.I.T., has been named to head the College of Architecture at Cornell University. . . . **Luke Hayden**, President of the Pittsfield, Mass., City Savings Bank, suffered a broken hip and a broken knee in an automobile accident July 30. When last heard from, he was still in the hospital in a cast, but hoped to be home by the latter part of September. He estimated that he would be on crutches after that. . . . **Ted Walkowicz** returned to his Alma Mater, Bartlett High School, Webster, Mass., last June as principal speaker

at the commencement exercises. . . . **Joe Bowman** writes, "Our family is now two girls and two boys. We love Denver, especially the mountain life and ever-present sunshine—conducive to good trout fishing and golf."

Present on Alumni Day, June 13, were: Bud Ackerson, Johan Andersen, Hank Avery, Ed Marden, Sam McCauley, Charlie Sauer, Ted Walkowicz, and Reid Weedon.—Ivor W. Collins, Secretary, 9 Sunnyside Drive, Dalton, Mass.; Henry Avery, Assistant Secretary, Pittsburgh Chemical Co., Grant Building, Pittsburgh 19, Pa.

'42

In case you missed the announcement in the *Wall Street Journal* or the *New York Times*, **George J. Schwartz** was elected president of the Compo Shoe Machinery Corporation of Waltham, Mass. George was formerly president of the Boston Division of the Minneapolis-Honeywell Regulator Company. Under his direction the Boston Division (and its predecessor company, Doelcam Corporation) doubled in size to more than 1,000 employees engaged in the development and manufacture of precision instruments and industrial control equipment. He worked at the Servomechanisms Lab. at the Institute until 1946 and received a Navy citation for his research work on gun fire control equipment. From M.I.T. he went to Doelcam as engineering manager. George, Carol, and their two daughters, reside in Newton.

Dr. David Van Meter has been appointed manager of the new Litton Systems Inc., Advanced Development Laboratory in Waltham, Mass. His work has been in research and applications of information theory and statistical decision theory to problems of electronic warfare and communication systems. After receiving his B.S. with us he went to Harvard for a Ph.D. He then taught electrical engineering at Penn State University and later continued part-time teaching as a visiting lecturer at Harvard on communication theory.

The National Aeronautics and Space Administration has announced the appointment of **Dr. Robert C. Seamans, Jr.** as associate administrator of NASA. After receiving his Ph.D. from the Institute, Bob taught in the Department of Aeronautical Engineering at Tech before joining RCA in 1955. At RCA he was chief systems engineer of the Airborne Systems Department and, most recently, chief engineer of the Missile Electronics and Controls Division. From 1948 to 1958 he served on technical committees of the NACA and more recently he became a consultant to, and a member of, the Scientific Advisory Board of the Air Force.

In a recent letter, **Jerry Coe** mentioned that now is the time for preliminary planning for our 20th Reunion in June, 1962. We shall be reporting all new developments as they occur. Jerry also wrote that a business trip took him

to Wilmington, Delaware, with its opportunity to visit with Jean and **Hank Henderson**. Hank is an executive of Buster Brown Textiles, a company that manufactures high quality cotton knit goods.

A feature article in the *Manchester, Conn., Herald* tells of the work of **Mark R. Kravitz** on the Manchester Development Commission. Through the efforts of Mark and other members of the Commission new businesses have been brought to Manchester and established ones have expanded locally rather than moving away. In addition to his work as assistant to the general manager of the Connecticut Shade Tobacco Growers Association and operating his delightful eating place, the Hob Knob, Mark is a past president of the Lions Club, a trustee of the Lutz Junior Museum, and a director of the Manchester Child Guidance Clinic.

Alumni Day last June was enjoyed by a small but enthusiastic delegation from our class. Those present included Ed Gartland, Bill Pease, Wen Phillips, Jack Sheetz, George Tucker, Pete Hellige and your secretary. We remember not only the pleasant conversations and delicious dinner but also the excellently prepared and copiously served (at no extra charge) cocktails on the lawn in the golden glow of a beautiful June afternoon.

Way back last May upon entering a Boston-bound jet at Los Angeles, I found **Lloyd E. St. Jean** taking the same flight. Between the n (th) and $(n+1)$ (th) aperitif, I collected some news for this column, as follows: Lloyd is with Sanders Associates, Inc. of Nashua, N.H., as chief engineer, equipment design. He is concerned with airborne electronic systems such as radar, missile guidance, and Doppler navigation devices. Among the dozen Tech men in this 1400-man company are Mort Goulder and Dan Blitz, '40. During World War II Lloyd worked on Navy acoustic mine countermeasures and wound up his tour of duty sweeping U.S. mines out of Japanese waters. From there he went to Raytheon and then, in 1954, joined the Nashua Corp. In 1957 he joined Sanders. With four children in school, boys 16 and 2, and girls 13 and 6 years old, Lloyd and his wife have been very much concerned with and active in school support programs. As a member of the Nashua Citizen's Committee for Better Education he has been working for more and better facilities.

Col. Richard C. Gibson has joined the faculty of the Air Force Academy as head of the Department of Astronautics. From 1946 to 1951 he was assistant professor of electrical engineering at the Air Force Institute of Technology, and more recently was director of the Experimental Vehicles and Instrumentation Division of the Air Research and Development Command. Dick received his B.S., M.S. and Ph.D. degrees from the Institute, is a member of the American Rocket Society and Sigma Xi, and has published several papers on the principles of missile guidance in the *Journal of the Institute for Aeronautical Sciences*. Dick and Olive have three children, Richard Jr. 12, Virginia Rae 9, and Anne Christine 6.

A few months ago we dug up a list of the technical papers published by Dr.

Welville B. Nowak of Nuclear Metals, Inc. of Concord, Mass. Welville started out as a physicist and was a joint author of a paper with Prof. Van Atta before he received his B.S. Later papers were in Radar, the physics of metals, effects of high energy radiation on metals, ferrites, extrusion problems, and the inspection of nuclear reactor fuel elements. His papers have appeared in *Physical Reviews*, *Journal of Metals*, *Journal of Applied Physics*, and numerous government reports.

During the summer your secretary found that a descent in a high energy tennis match pushed his first lumbar vertebra beyond its elastic limit. The remainder of the material in the class notes file will, therefore, be held over until a later issue.

The weather in New Mexico, Missouri and California has been fine for **Ed Edmunds**, **Bob Keating** and **J. J. Quinn** but we New Englanders find hurricanes (Donna, this time) less than a pleasant way to end a summer.—Lou Rosenblum, Secretary, 49 Farnham St., Belmont 78, Mass.

'43

In June and July I received two publications from Colombia, both in Spanish, with interesting news of our classmate **Virgilio Barco-Vargas**, who is minister of Public Works for that country. One of the publications is the magazine, *Semana*, which is the equivalent of our *Time* magazine. Virgilio is featured on the front cover of the magazine and there is an article about him and the work he has been doing as minister of Public Works in the special feature section. The other article entitled "En Tren, De Mar A Mar" describes the construction of the railroad system in Colombia from Buena Ventura, which is on the west coast of Colombia, on the Pacific Ocean, northerly to Santa Marta, on the Atlantic Coast at the North end of Colombia. The article describes the construction of the link from Bogota northerly to a point near Santa Marta, and the reconstruction of the area near Santa Marta. From the photographs in both of these articles one can ascertain that this type of work in that country involves difficult procedures of construction because of the terrain and the many rivers and lakes which are encountered. The articles also describe the highway system of Colombia as it is linked with the Pan-American Highway system and the progress which is being made in the construction there. I believe that most of our classmates know that Virgilio returned to Massachusetts in the early 1950's and received a Ph.D. degree from Harvard in 1954. I only wish that I could read Spanish so that I could translate some of the things which seemed to appear in this.

An article in the *Boston Sunday Herald* in July described the pioneering work in the electronics industry which is being done by Hampshire Engineering Company in Newton Lower Falls, which was founded by **Raymond P. Mork** in 1954. Ray started the firm as a consulting busi-

ness and, in 1956, when the work load became too heavy, he was joined by Richard M. Dunham, at which time the firm also became incorporated. Ray was with the Baldwin Piano Company for a time and chief designer of its new electronic organ. Subsequently, he was with General Electric and Raytheon, serving as project engineer for the latter. This six year old corporation has tackled jobs that some of the giants shied from—and completed them on schedule and with a success that is boosting its reputation in the industry. Staffed by five engineers and a handful of technicians, the firm has designed and produced essential equipment for a three-point security communication system installed for the White House, designed a unique relay testing apparatus, originated and produced a submarine cable tester, and designed and constructed a complete computer system to be used in fixing aircraft positions with phototheodolites.

Ralph E. Leader has been promoted to manager of Raytheon Company's Microwave Cooking Department, it was announced in April. Ralph will direct the Radarrange microwave cooking program which includes the design, manufacture and marketing of high-speed electronic ovens to restaurants and institutions and the sales of Radarrange components to domestic stove manufacturers for incorporation in their home units. He joined Raytheon in 1946 and has been associated with the Radarrange program in various marketing capacities since its inception. A native of Needham, he is married to the former Barbara Hopkins, whom many of us have met at the reunions. The Leaders live at 123 County Way with their two daughters Christine, 14, and Beverly, 10. . . . **George H. Hotte**, Director of Allied Chemical's Fiber Marketing Department, was the recipient, in June, of an honorary Doctor of Textile Science degree, awarded by the New Bedford Institute of Technology, New Bedford, Mass. George, who received his M.S. degree with our class, and was a member of our faculty, has had broad experience in the textile field as a director of textile sales and technological research. He is past president of the American Association for Textile Technology; a member of the Board of Trustees, Textile Research Institute; and a fellow of The Textile Institute, Manchester, England. He was recently appointed to the Harold DeWitt Smith Medal awards committee of the American Society of Testing Materials.

Ernest W. Upton was a recent contributor to the *General Motors Engineering Journal* with an article entitled, "Determine the Angular Setting of Spokes Used in the Second Turbine of an Automatic Transmission," a problem for which he also supplied the solution. He is a section engineer of the GM engineering staff's Transmission Development Group and is in charge of the design and development of hydrodynamic drive units, including the supervision of testing and vehicle performance studies related to these units. A graduate of the University of Denver in 1941, Ernest received his B.S. in Mechanical Engineering in our

class, following which he joined General Motors as a junior engineer. He shared in the early development work on automatic transmissions for passenger cars and heavy duty transmissions for military applications.

Morton F. Spears was elected a director of Pickard & Burns, Inc., of Needham, a prominent research firm in the field of electronic navigation, communications and radar, and a prime defense contractor. Mort was also elected vice president—engineering. He joined Pickard & Burns, Inc. in 1954 as an electronics engineer, and will continue to direct the engineering department, including the engineering support groups. In this capacity he provides overall engineering management for the antenna and instrumentation sections and mechanical engineering and design. He also supervises the company's technical publications, project support functions, and custom manufacturing. Mort is also active as a Commander in the United States Naval Reserve in the radar and nucleonics field. . . . Dr. **Sidney Kibrick** who received his doctor's degree with our class, has been promoted to Assistant Clinical Professor of Pediatrics, at The Children's Hospital, on the Faculty of Medicine of Harvard University. . . . In the late spring of this year Dr.

Edward Epremian was appointed technical co-ordinator for the New York area in the Technology Department of Union Carbide Metals Company, division of Union Carbide Corporation. Ed received his degree in Metallurgy with our class, a Master's Degree in Metallurgy from Rensselaer Polytechnic Institute, and a Doctor of Science degree in Metallurgy in 1951 from Carnegie Institute of Technology. He joined Union Carbide Metals in 1957 as senior research metallurgist, and prior to that was employed with the Atomic Energy Commission in Washington, D. C. Ed is a member of the American Institute of Mining, Metallurgical and Petroleum Engineers, and the American Society for Metals.

Sidney Siegel has been named assistant to the president of Judson L. Thomson Manufacturing Company, Inc., of Waltham. He is an ex-president of the American Society for Metals, Rhode Island. For 15 years he worked extensively in precious metals with Metals and Control Corporation of Attleboro and later was manager of engineering for M.&C. Nuclear, where he helped build this company from a staff of 50 persons to more than 1200. . . . Dr. **John H. Lutz**, who received his Sc.D. degree in Chemical Engineering with our class, has been appointed assistant vice president of Scientific Design Company, Inc., of New York. With this company since 1952, Dr. Lutz will serve as director of the Division of Administration and Finance, a newly formed department including accounting, personnel, coordination, and office management.

Change of address notices find Major **David M. Falk** now living in Los Angeles, Calif.; **Bill Verrochi** now in Johnstown, Pa.

In order to keep our group alive and kicking your cooperation in submitting

items of news about yourself or other classmates would be sincerely appreciated by your secretary.—Richard M. Feingold, Secretary, 10 North Main St., West Hartford 7, Conn.; Assistant Secretaries: Christian J. Matthew, Arthur D. Little, Inc., 314 Battery St., San Francisco, Calif.; John W. McDonough, Jr., 413 North Miami St., Wabash, Ind.

2-'44

With fall nearly upon us, it's time for me to get out the first edition of the class notes for this volume. I have had several letters which I shall get into this month's notes. One from **Don Arsem** says he has been elected a vice president of the Wurlitzer Co., North Tonawanda Division. He has been with Wurlitzer two years, after having been with Stewart-Warner in Chicago, and General Electric prior to that. He reports that the family includes three daughters and a son, and he is living in Clarence, a suburb of Buffalo.

A note from the Alumni Office advises that **Felix Palubinkas** received his M.D. from Tufts School of Medicine this June. He is interning at U.S. Public Health Service Hospital in Baltimore, Md. His plans include work in research, where his physics background will be of direct value. Wife and daughter Alice, are living in Winchester, while Dad finishes up his internship.

A clipping from the Norwich, Conn., *Bulletin* advises that **Norm Greenman** has been elected vice president for marketing of Rogers Corp., in Rogers, Conn., specialists in the manufacture of unique non-metallic materials for industry. He has been very active in association work in various societies. Presently the Greenman family, which includes three children, lives in Woodstock.

Another clipping gives the whereabouts of **Bernie Howard**, who went on after Tech, and received an M.S. and Ph.D at the University of Illinois. After a nine-year stay at the University of Chicago, he has just been appointed Professor of Applied Mathematics at the University of Florida, where he will direct a Scientific Computation Center.

Unfortunately, although I had planned to be at the Alumni Day reunion, I was unable to make it. The list of those who did, includes: Henry and Mrs. Bowes, John Chamberlain, H. Bruce Fabens, Norm and Mrs. Greenman, Peter Matthews, Theodore Nathanson, Al and Mrs. Reppucci, Pete Quattrochi, Mrs. Peggy B. Smith, Joseph and Mrs. Snyder, and Egilda Witherell.

A very nice note came from **Carl Lindemann, Jr.**, who is vice president of the National Broadcasting Co., in New York. He and his wife Marguerite and their four daughters live in Old Greenwich, Conn. He reports his fourth daughter was born in April of this year. On another front, he advises that **Dick Soderburg** has just left Old Greenwich to make Houston, Texas, home base. From the note, one would gather that Dick has become quite a sailor. Carl says

that he had lunch with **Al Heckel** who is now owner of the Ford agency in Babylon, Long Island.

Received a note advising that **Bob Neel** has been named manager of transmission and components for Stromberg-Carlson's Telecommunication Division in Rochester, N. Y. Prior to joining Stromberg-Carlson, Bob had been with Western Electric, and Bell Laboratories.

There are several other letters that I shall get to next month. If you get a chance, drop me a note, and I shall include the information.—P. M. Heilman, Secretary, 131 Lindbergh Ave., Needham, Mass.

'45

The headline reads M.I.T. Class of 1945 15th Reunion held at Snow Inn June 10-12 a rip-roaring success! Now for the news;

From the time of **Lib and Jerry Patterson's** arrival on Thursday, June 9, until their departure on Monday, June 13, your 15th Reunion was enjoyed by one and all right down to Mary and **Jim Hoaglund's** three fine children who properly—and politely—remarked upon the beauty of the gals and the youth of the guys! If this reunion summary appears disjointed and disorganized but still much fun, the accident is purely intentional for this is much the manner in which your reunion was held.

Most authors and writers give credits at the end of their work—as we are being disjointed we shall do so at the start. First, let us thank again all those who made your reunion a success. Yes, I mean each and every one of you that made the merry trip to Harwichport; we enjoyed seeing you and we trust you enjoyed seeing us. And to that merry band of grand old guys from the Class of 1915 goes our envy and respects. When you consider the Class of 15 was having a 45th Reunion and vice-versa you may better understand the confusion. We also want to thank the weather, for the entire United States except that body of land east of the Cape Cod Canal had ideal weather the entire weekend. It is true we had rain most of Saturday and it is true that it was quite cool the same Saturday—but the sun did shine for two hours and we did have a beautiful sunset. Yes, and it could have rained Sunday, but it was only hazy most of the day.

Our last thought of gratitude is saved for our congenial host Frank Thompson and his staff of the Snow Inn—never, and I mean never, have so many (that's us) been fed so well for so little. The meals, the hors d'oeuvres, the service, the facilities, and cute waitresses were out of this world. **Jerry Patterson** and **Bill McKay** should be thanked again for insisting that your Reunion Committee "reune" at Snow Inn. Oh yes, I suppose you would like me to thank in your behalf the Reunion Committee. For what? All they did was plan the affair.

The reunion officially started "on arrival" Friday but two officials—namely, **Dave Trageser** and **Jerry Quinnan**—ar-

rived after six o'clock so the unofficial opening began in Fran's and my room about 3:00 P.M. with Jerry and Lib Patterson out of Binghamton, N. Y., and Nick and Rosemary Mumford all the way from Dallas, Texas. Before the first ice cube was melted we were joined by Bill and Betty McKay of Framingham and Bill and Jeanne Martin from Hartford. It is difficult to remember the order of arrival of others but before the afternoon was over it was necessary to adjourn from our room and porch to the downstairs sitting room in the cottage we shared with several others. Some of those who joined in the unofficial opening were Bob "Utica Club" and Carol Welch, Chuck, the bugler—he will never live that down—and Jeff, the only coed, Buik, the Vermont ranchers, Boston's Bachelor Bill "Mead ball" Meade, Ed and Elinor Stoltz of Pittsburgh, Bob and Ruth Gould of Livingston, N. J., as well as Jim and Mary Hoaglund all the way—family and all—from Phoenix, Arizona. Oh yes, I have forgotten Bill and Dolores Beam from Olmsted Falls, Ohio.

Sometime during this festive period those lovable Dekes, **Chick Street** and **J. J. Strnad**, bounded in. Chick and Helen Marie live in East Greenwich, R. I., while J. J. and Edna Strnad came from Cleveland via an evening in N. Y. C. Jerry Patterson, Bill McKay and I finally arranged for our "on the committee" punch party to start at the beach house.

The punch party ran from about 6 till 8 and before we adjourned to the main house for dinner—most of us had broiled live lobster—the majority of the Friday arrivals descended upon us. As one milled around one was apt to meet any of the following: Prexy Dave and Mary Trageser from Concord; Reunion Co-Chairmen Jerry and Cally Quinnan from Needham; Marshall "IBM" and Dorothy Byer from Vestal, N. Y.; Dick and Barbara McManus of Melrose; Frank and Tillie Gallagher from Lexington; Reunion Favor Committeemen Bill and Elaine Shuman from Amherst, N. H.; and—the other Bobbsey Twin—George and Jan McKewen of Lexington; Chris, our security analysis; and Jean-Boland, neighbors of mine from Old Greenwich, Conn.; Frank, the napkin man, and Alice Donohue, then from Dover, but now out in the Springfield area; another neighbor, Jim and Ellen Brayton from Weston, Conn.; Chuck "Metal & Controls," and Janet Patterson from Attleboro; Charles and Nancy Hart of Cohituate; Walter "Okie" and Louise alias Lulu O'Connell from Trenton, N. J.; Dick, our Reunion Photographer, and Barbara Luce; Bob, our Reunion Athletic Director, and Anna, expecting, Maglathlin of Norwell, Mass.; and, lastly, Al and Margot Oxenham from Pittsburgh.

As we were all about to sit down for dinner in walked Pete and Lou Hickey of Moorestown, N. J., and their—also the sailfish's—chauffeurs Tom and Jimmie Stephenson from New Kensington, Pa.; all four looked as though it had been a long hard dry trip—especially hard as one visualized the night before in Moorestown. As dinner progressed we were

joined by the St. Regis Paper boys—Tom Hewson without Betsy who was home in New Canaan, Conn., to allow the children a festive time; and Guy Gilleland without Betty, who was at the moment a lady-in-waiting. About dessert time Tom and Alice Markey of Berea, Ohio; Horace "Woody" and Phyllis Wood of Darien, Conn.; and Jack and Verna Atwood then of Charlotte, N. C., but now of greater New York; joined us. As dessert was cleared and the kitchen closed, in walked my old fraternity brother Julian "Buzz" and Lois Busby from Okmulgee, Okla.—and that day a ten-hour trip from Washington, D. C.

From about 10 till that late closing hour of 1:00 we all table hopped at the beach house; yes, there was some dancing but it was mostly elbow bending and talk-talk of old times, children, school, jobs and, of course, a little fabrication! The late evening arrival was Hal Thorkilsen from Denver; unfortunately, Lois was unable to join in the business trip. The day drew to a laggard conclusion as we all weaved our way to bed.

Saturday morning arrived all too soon—especially when one awoke to the pitter-patter of a steady but light rain. After a leisurely breakfast with more than usual cups of black coffee various groups spun off in all directions. Frank Donahue drove to Springfield for a meeting while Al Oxenham, Frank Gallagher, Bob Beam, and Jack Atwood adjourned for a grudge golf battle fully equipped with the necessary liquid nourishment to fight the cold, and others journeyed out to Tours of Provincetown. Led by the old antiquer Patterson girls—Lib and Jan—several gals, including Mary Trageser, Fran Springer, Ellen Brayton, and Lois Busby, made the rounds of all the antique shops within 20 miles of Snow Inn. Fortunately, Lib Patterson was the only big spender! During the morning Tom and Louise McNamara of Wollaston arrived having left the sun west of the Canal; also Art Schwartz, Secretary of '47 and his date, Nancy Lang, the former all the way from Los Angeles; Dave, our concessionaire, and Janice Flood of Natick; Warren Miller, both single and eligible, from Buffalo, N. Y.; John Reid '48 of Orange, N. J.; Clarence Lyons, our '46 guest, from Boston and, lastly, from Barrington, R. I., Matthew "Red" and Jane Harrington.

At high noon the first half keg was tapped; it was neither Jakies Dark nor Utica Club but it most certainly was welcomed and refreshing. The beer hour was thoroughly enjoyed by all—a most refreshing repast, before an excellent clambake put on by the Snow Inn staff. Several of the so-called young and hearty returned for seconds, thirds and fourths in lobster, steamed clams, and the like. Saturday afternoon was both leisurely and enjoyable for all, as the last of the first and the start of the second keg of beer on the beach club veranda served as a focal point. A few played bridge while others just gabbed; still others endeavored to display their athletic prowess in a strenuous game of beach-baseball; fortunately the ball was lost in the ocean before anyone was seriously hurt.

A few brave souls adventured into the brawny deep—primarily for the sobering qualities of the ocean rather than the cooling qualities! Several of the boys including Nick Mumford, Buzz Busby, Jerry Patterson and Tom Stephenson adjourned with Pete Hickey to Pete's parents' summer home in Harwichport for a brief tete-a-tete.

The late afternoon became a couple of hours of confusion as the class meeting was scheduled and rescheduled, and as people came and went with the tide and the beer. Only one person in the final analysis failed to get the word—old Mr. Busby. Buzz stood a valiant watch over the beach and beer from the originally scheduled hour of 4 till almost 6 when he adjourned to dress for dinner.

Did Buzz get dressed, did we have a class meeting? Yes, but for the details you must wait until the next issue.—C. H. Springer, Secretary, Firemen's Mutual Insurance Company, 420 Lexington Ave., New York 17, N. Y.

'46

As you all know, our 15th reunion will take place next June. A Reunion Committee has been formed and is headed by **Jim Craig**. I had hoped to be able to give definite plans in this the first issue of the Review, but they are not yet completely firm. A committee meeting was held in July at which time tentative plans were made to hold the Reunion in Boston as a result of the preponderance of opinion expressed in favor of this on the most recent questionnaire. There will be some problems in having a Boston reunion due to the large demand for hotel space on the reunion weekend, but I hope to be able to report definite plans in the December issue. **Don Hurter** is in charge of publicity and he may be able to get his first letters out before December.

We have had a very large return of the questionnaires sent out in **Herb Hansell's** spring letter, for which I thank you one and all. **Ralph Rawson**, a graduate member of our class, writes to state that he resigned from the Regular Navy and took a Reserve Commission in 1955. He joined Fansteel Metallurgical Corp. as chief engineer and was promoted to manager of their Metals and Fabrication Division in 1959. He retired from the Naval Reserve with the rank of Rear Admiral. He lives at 210 West Deerpath, Lake Forest, Ill. . . . **Ned Tebbetts**, our hard working Special Gifts Chairman, informs us of the excellent progress on improvement for Alumni Fund donations for 1959-1960 over 1958-1959. The increase is about 50 per cent in dollars contributed, which is considerably better than from any other class graduating in the 1940-1949 period. Real credit goes to the many metropolitan area chairmen all over the country, to whom he wishes to extend a large thank you. Ned is group actuarial assistant working on insured pension plans for New England Mutual Life Insurance Co., in Boston. He and his wife and son, John, live at Apt. 5-6C, 100 Memorial Drive in Cambridge, but are looking for larger quarters. . . . **Jim**

Craig is vice president, Staff Services Planning, Hotel Corporation of America, responsible for staff functions of the company plus the expansion program. With regard to expansion, Jim does a great deal of traveling, having recently visited London, Hamburg, Berlin, Rome, Paris, Puerto Rico and Ste. Croix. Jim lives at 4 The Valley Road, Concord, Mass. . . . **David C. Sherrick** joined Smith Corona and Marchant Inc., in 1953, starting with what is now their Kleinschmidt Division, and has lived through two mergers, first with Smith-Corona and then with Marchant. He started as a project engineer, became research and development manager, chief systems engineer, research supervisor, managing director of the Highland Park, Ill., Research and Development Labs., and is now the Washington technical director for long-range planning and technical liaison. Dave, his wife and two children, Sue (8) and Bob (6), live at 7705 Marbury Road, Bethesda, Md. . . . **Margaret Florencourt**, now Mrs. Robert W. Mann, was a special grad student in Course VI, while working as a research engineer on Project Whirlwind, the forerunner of the present Sage Computer. She subsequently married the President of the Class of '50. She has two children and lives at 5 Pelham Rd; Lexington.

Jack J. Hinman, another good associate of our class, is a Captain in the U.S. Navy and is presently assistant weapons engineering officer, Fleet Readiness, Bu-Weaps. He makes his home at 9712 Elrod Rd., Kensington, Md. . . . **Nicholas Grossman** is a technical evaluator for the U.S. Atomic Energy Commission. He had a three-month assignment in Europe during the 1958 Geneva Conference. He is married, has three children, and lives at 2300 McAuliffe Drive, Rockville, Md.

. . . **E. H. Newton** is an electrochemist in the Research and Development Section of Arthur D. Little Inc., Cambridge. He lives at 39 Virginia Road, Arlington.

. . . **C. S. Lyon** is a patent lawyer with Kenway, Jenny, Witter and Hildreth in Boston. He reports that **Bob Toperzer**, also a patent lawyer, recently joined his firm. C.S. was the guest of the Class of '45 at their 15th reunion at the Snow Inn on Cape Cod. He reported that the accommodations were very fine at the Snow Inn and the committee's choice between Boston and Cape Cod is difficult to make as a result. . . . **John E. Taylor** writes a very newsy letter from which I will quote rather liberally. "After leaving M.I.T., I attended law school, became a patent lawyer and have stuck with it, although I have become involved in various other activities from time to time. One was a small company that attempted to develop an electrostatic relay calculator. The early models were promising but development costs became a problem, hence the project is now dormant. The stock market has been more rewarding, although I am now looking into a real estate proposition in Illinois. I have taken an interest in the local M.I.T. Club, but have finished serving in all of the various offices. At present, I am the St. Louis Regional Secretary of the Educational Council and an Honorary Secretary. This is quite interesting and I can testify to the rigorous

requirements one must meet for admission to M.I.T. these days. I wonder how many of our class would be accepted today. Politics has been another interest, but my views seem to correspond more to those of the Whigs than to those of the present parties. I still play squash, but hunting and fishing are my principal outdoor activities. In looking back, I would still recommend M.I.T., but what one learns after college seems much more important than what one learns at college. If a college stimulates curiosity, it can do little more." John is a partner in Sutherland, Polster & Taylor with offices in St. Louis, Mo., and he makes his home at 6628 Kingsbury, University City 30, Mo.

William E. Becker is vice president for R & D of the Bacon Felt Co., Taunton, Mass. He is married, has three girls and lives at 2322 Taunton Ave., Norton. . . .

William H. Peirce is now chief mathematical analyst in the Digital Computer Division, General Dynamics Corp., Groton, Conn. In 1951 he received his M.S. and in 1956 his Ph. D. in mathematics, both from the University of Wisconsin. He was Assistant Professor of Mathematics at Michigan State University, 1956-57, at which time he joined Electric Boat. Bill has two boys, lives at RD #1, Box 244, Stonington, Conn., and is active in Red Cross work in Stonington. . . . **Robert E. Spoerl** informs us that after ten years with U.S. Rubber, he is now vice president for Marketing at the Exeter Mfg. Co., Exeter, N.H. Bill's new address is 136 High Street, Exeter, N.H. The Spoerls have three children, the latest, Nancy Elizabeth, is now a year old. . . . Be sure to start thinking of ways and means to attend so that it will be the biggest ever.—John H. Maynard, Secretary, 15 Cabot St., Winchester, Mass.

'47

Your correspondent had the opportunity to attend Alumni Day last June, after spending the weekend at the Class of 1945 reunion on the Cape. Rather than submit the details of the weekend, which I'm certain will be covered by Clint Springer in his class notes, let me first concentrate on Alumni Day. Our President, **Claude Brenner** is now Chief Engineer of Allied Research Associates, located in Boston. I had the opportunity to spend a few minutes with him at the luncheon in the Du Pont Court. . . . **Don VanGreenby** was also there, and he advised that he is still single and in the building construction business in Lowell. Subsequent to our talk, I received a clipping from the Lowell paper indicating that he has been appointed to the head of the Neighborhood Improvement Division of the Revitalized Greater-Lowell Chamber of Commerce. . . . **Parker Symmes** and I swapped info since the reunion in Lenox, and he advised that he now has two more children than at the tenth, and another on the way. . . . Ran into **Joe Riley** during the morning registration period. Joe is associated with AT&T in New York, and presently re-

sides in Chatham, N. J. . . . **Ruth and Bob Gould** ('45-'47) attended the activities at the Institute after reuniting with '45. Bob is presently general manager of the Thermal-Aire Corporation, which manufactures quartz tubes for many types of drying operations. . . . **John Contegni** was also at the luncheon, and reports status quo since we last reported. 8 . . . **Milt Robins** was there. He and his wife had last seen me at the Packaging Show. Milt is manufacturing aerosol testing equipment, and his success with these units in New Haven has been good. . . . **Arnold Judson** evidently attended the dinner, which I did not. Arnold had an article in the Concord, Mass., paper recently concerning his musical compositions, covering the ballet, musical revue, and background music for stage plays. He is presently in charge of the training and development programs of the Polaroid Corp.

In the realm of business advances, the following information has been received: Dr. **Leonard W. Russum** has been appointed a division director at the Whiting Research Laboratories of Standard Oil Company (Indiana) at Whiting, Ind. . . . **George H. Fine**, a '47 M.S. in Textiles, is supervisor of the Charlotte, N. C. laboratory of the Refined Products Company, manufacturers of specialty processing chemicals used in the textile finishing industry. . . . The Pennsalt Chemical Corp. has appointed **Russell W. Sloan** manager of the newly-created Marketing Planning Department of that company. He lives in Strafford, Pa. with his wife, Margaret, and four daughters. . . . **Jim Haggett** has been appointed supervisor of the Industrial Engineering Department of the Norton Company, Worcester, Mass. He is presently residing in Shrewsbury, Mass., with his wife, Esther, and two children. . . . Dr. **Vincent S. Haneman** has recently opened a consulting office specializing in the fields of automatic guidance and control, mechanical, electrical and aeronautical engineering, in Dallas, Texas. . . . **James W. Martin** has been appointed works manager of the Bucyrus-Erie plant operations in South Milwaukee, Wis.

David K. Hardin, presently Executive Vice-President of Market Facts, Inc., a marketing and research firm in Chicago, has been elected to the presidency of the Chicago Chapter of the American Marketing Association. In September, he attended the convention of the European Society of Market Researchers at Scheveningen, Holland. . . . At the 11th annual Coating Conference of the Technical Association of the Pulp and Paper Industry (TAPPI) in Chicago last May, **Hugh Lavery** was chairman of a panel discussion on "Coating for Printing." Hugh is a coating engineer at the Northern Division, International Paper Company in Corinth, N. Y.

Information on technical papers recently published by class members includes the following: **T. B. Garber**, in the May issue of Aero Space Engineering, has an article concerning the problems involved in guiding a vehicle from a terrestrial launching point to a moving orbital satellite. In the August issue of

the same publication, **M. Aarens** discussed the subject of air-breathing jet engines in high Mach number vehicles. Mr. Garber is presently with the Rand Company in Santa Monica, Calif.; and Dr. Aarens is a visiting lecturer in the Department of Aeronautical Engineering at the Israel Institute of Technology. . . . Dr. **John C. Fisher** published an article appearing in the Research Laboratory bulletin of the G.E. Research Lab., on the relative number of publications devoted to scientific research published by the U.S.S.R. and the U.S. . . . An interesting paper was published on the work of **E. E. David** at the Bell Telephone Laboratories concerning the "Cocktail Party Effect," the ability for a person to pick up specific sounds from a surrounding babble, as at a cocktail party. This necessitates the use of two microphones which are compared, to give the desired effect. All of this without the assistance of a martini!

Lastly, **Jim Prigoff** advised that he has attained the National Championship in Squash-Tennis. He's only been in the game for five years. While at the Institute, he developed his leg muscles and wind under the tutelage of Oscar Hedlund, which is no doubt an important factor in his pre-conditioning. Congrats from all the fat and winded classmates, Jim.—Arthur Schwartz, Secretary, 8355 Blackburn Ave., Los Angeles 48, Calif.

'48

In looking over the memoranda I have received for the fall issue of our magazine, I am quite surprised to note that no summer marriages were reported. I figure we must be running out of eligible bachelors, and from the number of promotional announcements I have, I assume everyone is concentrating on a career.

Let's start off this new season with a rundown of those present at Alumni Day, June 13: Bob Bliss, Tom Cahill, Sol Manber, Walter Mellen, John Mitchell, Fred Radville, Alfred Seville, Harry Sipe, Arlie Sterling, and Vincent Vappi. Those attending with their wives were Bernard Gordon, Dick Harris, Dave Hoadley, Harry Jones, Milt Kamins, Henri Langlois, Sam Levin, Ed Mikol, Patterson Spencer, and Haig Yardumian.

Rev. **Dominic Silvestro** was ordained into the Order of Friars Minor in June. He is studying the Japanese language preparatory for service in Japan.

Research is quietly and persistently being pursued in Carlisle, Mass., by the Parke Mathematical Laboratories headed up by Dr. **Nathan G. Parke**. Seldom employing more than 14 members, the laboratories have as their main purpose the application of abstract mathematics to engineering problems.

Frank Guptill of Whittier, Calif., has received a patent covering improvements in preventing scale formation in slurry feeding processes by means of a mixture of ammonia and carbon dioxide.

The electronics business is booming as evidenced by the Wayne-George corporation in Boston. President of this 3½-

year-old company, whose sales are expected to be \$1.2 million this year, is **George Wayne**, and its principal product is a shaft position encoder.

As there have been many job changes in the past few months, let's cover the ones for which I have received notification:

Bill Oard has been named vice president of Detroit district sales by the Modern Talking Picture Service, Inc. The company is a distributor of business public relations films. . . . **Bob Williams**, formerly with M.I.T., has been appointed professor of physics at the University of Washington in Seattle. . . . In July, **John Randolph** became vice president of Boothe Leasing Corporation, one of the nation's largest lessors of industrial equipment and business machines. John and his wife are planning to relocate in Greenwich, Connecticut. . . . Dr. **Charles Winnick** has been appointed Assistant Director for Exploratory Research for the Scientific Design Company, Inc.

Dr. **Leonard Maier** has been named manager of engineering for the General Electric Company's Semiconductor Products Department at Syracuse. In this position, he will direct and be responsible for all semiconductor engineering and advanced research studies.

From the Eli Lilly Company comes word that **Bruce Kline** has been named manager of agricultural and industrial products. He will assist in development of markets and coordinate promotion of agricultural and industrial products outside the United States. . . . **Albert Bryan** has been named manager of advanced development for Raytheon Company's Missile Systems Division.

The Semiconductor Division of Sylvania Electric Products, Inc. announces the appointment of **Richard Tonner** as product line manager. Dick joined Sylvania in 1948 and has worked in Boston and Woburn. . . . Dr. **Chester Bragaw** has been promoted to Research Supervisor at the experimental station of the Du Pont Company's Polychemicals Department in Wilmington, Del.

Two promotions have recently been announced by the Socony Mobil Oil Company. **Willem Thorbecke** has been named assistant manager of the petroleum chemicals division, and **Bob Thena** has been appointed chief engineer of fuels in the product technical services division.

From the International Nickel Company, Inc., comes word that **Bob Savage** was appointed foundry industry manager for the Primary Nickel Department in April. He has been with International Nickel since 1949.

In the scholastic field, Dr. **Martin Lessen** has been appointed professor of mechanical engineering and chairman of the department at the University of Rochester. He was formerly at the University of Pennsylvania. . . . Also, at Case Institute of Technology, Dr. **Martin Klein** has been promoted to the rank of full professor in physics and Dr. **John Little** to the rank of associate professor of management.

One of our associate secretaries has supplemented his class notes activity by

writing a book. In June, Reinhold published "Organizing the Technical Conference" by **Herb Kindler**. In his book, he tells how to go about initiating, planning, organizing, and conducting technical conferences.—Richard H. Harris, Secretary, 26 South Street, Grafton, Mass.

'49

If all goes well, about the time you read these notes you should be receiving a questionnaire for information to be used to fill class notes later this year. Please fill them out, for two reasons: to help me gather news to report; and to provide information to your many classmates who have "wondered what became of——." Since we have been asked to be brief this month to facilitate a transition to a new printer, we will take the space to report only a few of the many news items which have piled up over the summer.

Alvin V. Block headed the design team for the nose cone which released a huge sodium cloud 150 miles over Wallops Island, Va. last May. He is chief engineer for the Geophysics Corporation of America, in Cambridge. . . . **Herbert L. Neitlich** of Framingham (M.S., 1949) was named "Man of the Year" from the Blue Hills District of the Metropolitan Life Insurance Company for outstanding sales in 1959. He has been a Metropolitan Life Insurance consultant since 1958. . . . **Otto G. Lewis** (S.B., X, 1949) received his Ph.D. from the University of Akron in June of 1960.

Robert W. Groff was promoted to assistant chief engineer for the J. O. Ross Division of Midland-Ross Corporation. The promotion will involve a move to the New York office from the Seattle office where he was district manager.

Dr. **Emil J. Slowinski, Jr.**, (Course V, M.I.T.) has been awarded a Science Faculty Fellowship by the National Science Foundation. He plans to spend a year studying at Oxford University in England on leave from the University of Connecticut where he is an associate professor in Chemistry. . . . **Peter Whoriskey** (S.B., X, M.I.T.) was married to Miss Phyllis MacNeil at St. Theresa's Church in West Roxbury in July, 1960. The bride, a teacher in Hyde Park, was graduated from Roslindale High School and State Teachers College at Boston. According to the West Roxbury *Transcript*, they are now living at 224 The Jamaica way.

Dr. **E. R. Hermann** is president-elect of the Gulf Coast Section of American Industrial Hygiene Association. He is health engineer for Humble Oil & Refining Company, Baytown, Texas.

Present at Alumni Day, June 13, 1960, were Russell N. Cox, George R. Diligenti, Mr. and Mrs. Aldo C. J. Di Mascio, William S. Edgerly, Mr. and Mrs. Archie H. Harris, 3d, Joseph M. Lynch, Philip A. Lynn, George H. R. McQueen, Paul T. Reynolds, and Kemon P. Taschioglou; a small but obviously influential group.—Frank T. Hulswit, Secretary, 14 Nadine Rd., Saxonville, Mass.

'51

It is with deep regret that we report two deaths. On July 16 **Frederick Hadden** was killed in an auto accident. His widow is Helen S. Hadden. **Vincent Campbell** has been reported as deceased, but no date was given.

The responses to our solicitations for information for these pages and for class dues have been gratifying. Any who have forgotten to make their returns are hereby reminded. The responses indicate a strong interest in our 10th reunion only seven months away. After setting a record for turnout at our fifth reunion it appears we are to set a record for the 10th.

From **Ted Albert** we learn he was awarded the title of Registered Jeweler by the American Gem Society in 1958. In 1956 he was the Jaycee "Young Man of the Year" in Palatka, Fla. . . . **Fred Aldrich**, now the father of three, was made chief engineer of Technology Instrument Corp. . . . **Jack Anderson's** wife, Pat, has her hands full caring for four boys while Jack serves the Bundy Corp., of Norwalk, Conn. as systems supervisor. . . . **Dick Armstrong** reports that he bought a house and settled down after a European honeymoon in 1958 following his marriage to Diane Devoe. . . . **Alan Ashby** now makes his home in Riverside, Ill., with his wife, Janet, and three youngsters. . . . **John Aycrigg** is a resident in psychiatry at the University of Colorado Medical Center in Denver. He and Marilyn have a boy and a girl. . . . **Mihran Ayzavian** is a research engineer with Boeing living in Renton, Wash. . . . **Gene Babb** spent 1956-59 as the Dayton area representative for Hughes Aircraft Co., and then transferred to the Hughes Washington office. While there he was married to Clancie King of Washington.

David Bakalar continues to be the subject of feature stories for the success of the Transatron Electronic Corp., of which he is President. *Time* magazine published its feature last December. On May 15 last he was married to June Gale Kaufman, Wellesley '53 (A.B.), Columbia '56 (M. S. W.). In June he returned to Classical H. S. in Lynn, Mass., as the commencement speaker for his old high school. . . . **Charles Baker** is a staff member of the Rand Corp. and lives in Santa Monica with his wife, Alice. . . . **James Ballow** is "busier than ever practicing architecture" in the shore area north of Boston. He and Phyllis have four girls. . . . **Jim Banister** reports from Palo Alto that he and Sara Lee had "three boys in three years—no time for anything else." . . . **Jack Barcinski** is living in White-stone, N. Y. His wife, Joan, delivered Derek Scott in January, 1959. . . . **Norman Bassett** lives in Tulsa with wife, Marge, and sons, Scott and Kevin. . . . **Glenn Battaglia**, now with the Polaroid Corp., is living in Lexington where wife Ann cares for Kathleen.

Manfred Becker is engineering manager for Aircraft Applications at the Fafnir Bearing Co. Margaret, his wife, delivered Mary Ann last February. . . . **Roy Benjamin** and wife Florence are living in Car-

stadt, N.J. . . . **Maria Azzarone Bentel** reports from Long Island that she and husband, Frederick (M. Arch. '50) have had their own architectural practice since 1957: "very busy office so far and hope it continues forever." Their son's name is Paul. . . . **John Bergmann** tells us that he is "still in the same rut I got into in 1951, but I like it fine. Been travelling some: Canada, Mexico and Nova Scotia." He, Heidi, and Peter live in Paramus, N.J. . . . **Jay Bernstein** received his M.S. in applied math from Adelphi College. He and Marjorie live with three children in Glen Oaks, N. Y. . . . **Frank Binns** is Senior Project Engineer for Nuclear Fuel Elements at M & C Nuclear, Inc., Texas Instruments. He and Audrey have two boys and live in Seekonk, Mass. . . . **Marshall Blank** has been preparing engineering manuals and tables on engineering economics for the Corps of Engineers. He and Gloria have two girls and live in Redwood City, Calif. . . . **Leroy Blumberg** works on various research problems at the Los Alamos cyclotron. His wife is Sydel and his daughter is Manya. . . . **Chris Bolta** is in nuclear development, missile cooling, at Oak Ridge. Joy keeps busy with Lynn, Nancy, and Christian. . . . **Dean Boorman** has "just started work as a city planner with Ebasco Services Inc.—this big engineering firm used to concentrate on utilities work, now covers facilities and industrial planning, and, since 1958, community planning, too. I was married last December. Was a Greenwich Villager over the winter, decentralized to Montclair" in May.

David Bossen is sales manager for Industrial Nucleonics Corp. He and Doris have three daughters in their Columbus, Ohio, home. . . . **Lawrence Bray** is now an associate member of Edgar A. Stubenrauch & Assoc., Architects. He is the partner in charge of design. Five children share a Sheboygan home with Lynn and Lawrence. . . . **Donald Breck** is now senior research associate at the Linde laboratories in Tonawanda, N. Y., where he heads the silicate chemistry group. He has 13 patents pending on synthetic zeolites. He and Margaret have two sons. . . . **Walt Brill** is with DuPont in Wilmington as power design engineer. A while back he visited **Paul Grady** and family in their new home in Westport, Conn. Walt and Rose have two daughters. . . . **Lee Brodsky** is vice president of the Hudson Painting and Decorating Co., and is serving as chairman of the committee on standards of the Painting and Decorating Contractors of America. He and Sandy live with two daughters in Greenwale, N. Y. . . . **Aaron Brody** has been appointed to the Food Service Advisory Committee, U. S. Navy. He and Carolyn have two sons. . . . From **Edward Bronstein** we learn that he has "the softest job of the class—Kingcoil Springwall mattresses." He and Elsa have two daughters and possibly another by now. . . . **Robert Browns**, Major, USAF, has been the Missile Safety Officer at the Air Proving Ground Center. With Jane, four girls and a boy he lives in Walton Beach, Fla. . . . **Don Brown** is teaching part time at the U. of Miami, where he designed the Christian Science Organization Chapel.

He and Jane live in Coral Gables. . . . **Dwight Brown** is busy with the development and analysis of nuclear power plant control systems. Three girls and a boy share a Granada Hills, Calif. home with him and Marie. . . . **John Brown** was transferred from the Beckman Systems Division in southern California to the Mitre Corp., in Lexington, Mass. Ruth and two daughters made the trip back east, too. . . . **Harold Bruce** was recently transferred to Palo Alto as assistant manager of West Coast operations for NRC Equipment Corp. Kathy joined the family to stop the string of boys at three. . . . **Robert Bryan** is principal planner, Goodkind & Odea, consulting engineers and planners. His specialty is municipal and regional planning and redevelopment. He and Barbara make their home in Fairfield, Conn. . . . **Henrik Bull** received an Award of Merit at a recent A. I. A. convention for a residence in Belvedere, Calif. The Homes for Better Living Competition was sponsored by the A. I. A. and Life Magazine. He and Barbara live in San Francisco. . . . **Fred Bumpers** took a six weeks' business trip to Europe last spring; Mona, his wife, shared the excitement. . . . **Owen Burnham** is the Director of Planning for Ogden City, Utah, where he and Colleen live with six children. . . . **Byron Burch** was made manager, Systems Engineering Unit, Small Computer Systems Engineering Sub-Section, Computer Dept., General Electric Co. He and Marguerite have three little ones in their Phoenix home. . . . **Marvin Burns** was promoted recently from director of engineering to general manager of United Engineers, Inc., a consulting engineering firm in Boston. . . . **Julian Busgang** went to Lincoln Lab. after graduation, earned his Harvard Ph. D. in 1955, and went with R. C. A. in Burlington, Mass., where he is now manager, Applied Research. . . . **Bob Butters** is the Southwest Ohio Sales Engineer for Industrial Nucleonics Corp. He spent two years (1951-53) in the Air Force and four years as sales manager of Yellow Springs Instrument Co., before taking his present job. He and Selene have four kids in their Cincinnati home. . . . **William Callahan** is the General Manager of Philbrick-Booth & Spencer Inc., of Hartford, Conn., since January first. Milliecent and he have two in their Bloomfield home. . . . **Ed Candidus** is with the National Research Corp., in Cambridge. . . . Our apologies go to **Ronald Cann** for neglecting to report earlier on the birth of Peter in March of 1959. He and Lois were "trying to evolve plans for a new house, which we like and can afford. Taught 10 weeks' adult evening course in dynamics and servomechanisms."

David Caplan is a group leader with R. C. A., Defense Electronic Products, Surface Comm. Division, temporarily located at Bell Labs in Whippany, N. J. Elinor and he have a boy and a girl. . . . **Charles Carpenter** is now living in Cambridge. . . . **Jack Carpenter** is living in Saxonville, Mass., with Virginia and two daughters. . . . **Charles Chadwick** is a Senior Test Engineer with Sikorsky Aircraft. Recently he drew a trip to Hawaii to observe ASW tactics with an aircraft

carrier. Elvira and he have two daughters. . . . **Howard Chapman** reports he has "been in and out of business twice." He and Jacqueline live in Skokie, Illinois, and have two boys. . . . **Ivan Chasalow** had a year in Key West and is now with Bell Labs. He and Carol have four young sons. . . . **Averil B. Chatfield** is now living in Torrance, Calif., with wife Trudie and children, Betty and Janice. . . . **Roger Christman** has been a materials engineer with Westinghouse Atomic Power since 1957. He recently completed the requirements for the M. S. in Chem. Eng. at the University of Pittsburgh. He and Mary have three (possibly four) children. . . . **Ronald Clanton** is manager, weapon system analysis, Westinghouse Electric, working on the specification of airborne guidance and control systems for aircraft and missiles. Rosemary tends after two in their Maryland home. . . . **John Clegg** is working at Polaroid. . . . **James Cobb**, now a colonel in the Air Force, is director of advanced technology, A. F. Missile Development Center. His organization recently completed the first year of operation of a central Air Force inertial guidance test facility. He, Frances, and their two girls live at the Holloman Air Force Base in New Mexico. . . . **Albert Cohen** is living in Tewksbury, Mass., and he and Anna have one daughter. . . . **Ramon Colon** is preliminary design engineer, Large Jet Engine Dept., G. E. Two girls share the home in Cincinnati with Ramon and Kathryn. . . . **George Calvill** reports "nothing spectacular—just struggling for orders." He and Jackie have three children. . . . **Dale Cooper** is working as consulting engineer in management science with Bonner B. Moore Engr. Assoc. He and Shirley have three children and live in Houston. . . . **Philip Currier** is working on information systems design for large scale digital computers for G. E. His home near Schenectady is full of girls, wife Janet, and Jean and Phyllis. . . . **Henry Cutler** has become a commander in the Navy. He is now air operations officer in the Pacific attached to the U. S. S. Ticonderoga. His wife, Jeanne, cares for three children in Hillburn, N. Y. . . . **Elliott Cutting** reports from Pasadena that he and Ann have a boy and a girl now. . . . **Peter Darin** spent last year in the Sloan Fellowship Program at the Institute. He is outnumbered with four daughters in his Southfield, Mich., home. . . . **Burt Dempster** is sales representative for Wild and Associates who carry data processing equipment. He and Ellen try to hold down three boys in Southampton, Pa. . . . **Karel den Tex** spent two and a half years with IBM in Germany organizing a development lab and developing accounting systems. For two years he has been with the IBM Electric Typewriter Division in Lexington, Ky. He and Anita have two children. . . . **Francois de Peyrecave** is President of Pengeot, Inc. in New York and recently moved to the Honduras to take over the family business. . . . **Armand d'Avaucourt** is an engineer with Socomy Mobil Oil and serves as chairman of the board of Technical Studies, Inc. He and Henriette live in Manhattan with two children. . . . **Robert Dobbins** was

married last April to Helen Streiff. . . . **Paul Douglass** moved back east in 1957. He is now manager of production design, Gillette Safety Razor. He and Dorothea have one daughter, Susan. . . . **John Dowds** is a partner and general manager of Anabaco, oil and gas producers. They recently completed their seventh gas well in Beaver (sic) county of the Oklahoma Panhandle. Joan keeps their four children quiet enough for John to serve as vice president of the M.I.T. Club of Oklahoma. . . . **George Downie** began private practice in architecture earlier this year. At home in Franklin Lakes, N. J., are three girls and wife Joan. . . . **Norman Edelson** is now supervisor of process engineering at the Danville plant of Corning Glass Works, after a staff engineering job at Corning, N. Y. He and Leslie share their home in Kentucky with three children. . . . **Stephen Eisen** is district manager, Equitable Life Assurance Society and chairman of Estate Planners Day of N. Y. Chapter, Chartered Life Underwriters. He and Myra live in Manhattan with three daughters. . . . **Abraham Epstein** has been programming for the IBM 704 for the AFCRC. He and Sylvia live in Waltham and have three children. . . . **Jurgen Elkan** has been working on communications system design for Weather Observing and Forecasting System 433-L (a joint Weather Bureau, FAA, and Air Force program) at Hermes Electronics Co., in Cambridge. He and Gretel have one daughter, Judith. . . . **Charles Ellis** was promoted to assistant chief engineer of Kaman Aircraft in 1959. He and Madaleen live in Connecticut and have three children. . . . **William Erb** is now president of Polyco, Inc., in Georgia, manufacturers of missile components, swimming pool accessories, and plastic bottles. He and Callie have two sons and live in Atlanta. . . . **Albert Erickson** is now with General Electric's Aircraft Accessory Turbine Dept., at Lynn, Mass., in the position of senior mechanical-combustion engineer. He has been working on the development of advanced gas generation systems for auxiliary power on aircraft missiles and space vehicles. He had been with GE in Schenectady earlier. He feels outnumbered by females with four daughters. . . . **Dan Esakov** is chief electronics engineer of the Connecticut Technical Corp. Earlier he had been with Underwood's Research and Engineering Laboratory working on miniaturizations and standardization of digital electronic modules.—Richard W. Willard, Secretary, Box 105, Littleton, Mass.; Robert S. Gooch, Assistant Secretary, 407 Danciger Building, Fort Worth, Texas.

'53

My sincere appreciation for the excellent response to the questionnaire that **Paul Shepherd** forwarded to you earlier this year. In the months ahead the information from these forms will be included in the notes column, and hopefully it will represent the sort of activities you would like to hear about.

Dick Salter took "the bull by the horn" last June. He married Polly Harris on June 4 and received his ScD (in Mechanical Engineering) on June 10. He and Polly were married in Gilford, N. H. One of their ushers was **Bruce Beckley**, a fellow classmate. . . . Four other classmates were also married this summer. **Gunther Balz** and Alice Ihling took their vows on the 3d of September in Kalamazoo, Mich. . . . **Alan Rosenfield** and Margaret Ann Young were married on the 15th of May here in Cambridge. . . . On July 2 **Mike Levy** and Carol Bomeisler were married in New York City. Mike spent two of the last seven years in Korea as a commissioned officer, and his wife is an alumna of Centenary College for Women and attended Columbia University School of General Studies. . . . **Carroll Miller** and Miriam Minor were also married in New York City, but one day earlier, on July 1. They are now living in Marion, Mass. Miriam received her B.S. and M.S. from Western Reserve in Cleveland.

Dick MacCarthy has been promoted in the Spectrochemical Division of Baird-Atomic, Inc., and will be located in Glen Ellyn, Ill. . . . **Daniel Mattis** was an author in the April issue of the IBM Journal. Presently he is a member of the Physics Department in the Poughkeepsie Research Center of IBM and is specializing in various problems of solid state physics. Dan obtained his PhD from the University of Illinois in 1957 and following graduation spent a year at the Ecole Normale Supérieure in Paris. . . . **Jeff Davis** recently was named to a new post at Dewey and Almy Chemical Division (W. R. Grace & Co.). He formerly was assistant to the research director and is now manager of the Special Projects Laboratory, Container and Chemical Specialties Division. . . . **William Moffat** completed his doctorate in metallurgy and has been appointed an assistant professor of Metallurgy here at Tech. He and his wife Janet have three children and are living in East Weymouth. . . . **Bob Ferran** recently joined the research and development staff of Technology Instrument Corporation at Acton, Mass. He formerly was with Transonics, Inc., and the Air Force. While serving with the latter agency he was assigned to the Air Force Cambridge Research Center and Lincoln Lab.

Anthony Zaia was named the "Outstanding Young Architect in Washington, D. C." by the Washington Chapter of the National Academy of Science and the Washington Council of Architectural and Engineering Societies. He was cited for ". . . his outstanding contribution at the age of 30 to the new headquarters building of the Central Intelligence Agency." . . . **Ralph Wilbur**, who was formerly employed in the Power Tube Division of Raytheon Manufacturing Co., was recently appointed as resident applications engineer for the New England area with Photocircuits Corporation. . . . **Dick Linde** dropped by while on a business trip to Boston. He and Ruth, plus their young son Mark, are living in Jackson Heights, N. Y., where they have bought a co-op apartment. Dick keeps

busy as the market development representative in the Market Research and Development division of Stauffer Chemical Co., and by studying at the N.Y.U. Graduate School of Business where he hopes to finish his M.B.A. degree in 1961.

I would like to continue this "spiel" but . . . time has run out; school starts in two days; students are already banging on the doors. You do remember, don't you? However, I will include more next issue.—Martin Wohl, Secretary, Room 1-131, M.I.T., Cambridge.

'54

Now that most members of the class have their military service behind them, the bulk of the news we receive concerns the class's massive assault on the nation's industry. **George Bartolomei**, for example, has recently associated himself with Allis-Chalmers, in Milwaukee. . . . **Jerry Perlstein** is working for the Tenney Engineering Corporation in Union, N. J. . . . **Art Jacob**, who acquired a law degree last February, is completing his legal apprenticeship in New Brunswick, N. J. . . . **Allen Schultz** is working for the Kirkland Construction Company in Cambridge. . . . **Jim Dwyer** is an engineer for Dewey and Almy Chemical Company in Cambridge. . . . **Dave Dennen** is in the Physical Chemistry Division of the Eli Lilly Company, Indianapolis. . . . **John Fitzpatrick** is with the New York office of the California-Texas Oil Company. . . . **Dick Jones** works for General Electric in Evendale, Ohio. . . . **John Murkland** toils for the Perkin-Elmer Corp. in Norwalk, Conn. . . . **Nick Markoff** is back in Boston, working for the Wellington Sears Company. . . . **Gordon Smith** is with the Fenwal Corporation in Ashland, Mass. . . . At the other end of the country, **Decker McAllister** is employed by the Pacific Scientific Company in San Francisco. . . . **Stan Oleson** is with the Stanford Research Institute, Sonics Section, in Menlo Park, Calif. . . . **Paul Stern** works in Department 490-1 at the Ampex Military Products Company, Redwood City, Calif. . . . **Pete Embree** has moved from Peru to Dallas, Texas, where he is with the Geophysical Service, Inc. . . . And **Tony Turano** has settled down with Esso Standard Oil Company in Baton Rouge, La.

There are still a few of us, however, toiling for Uncle Sam. **Dick Hayes** is now a captain in the Air Force, working for NASA in Washington. . . . **Shel Dick**, at last report, was at Two Rock Station, Calif. . . . **John Giancola** is playing with ballistic missiles in Los Angeles. . . . **Bill Hartrick** is at Lakewood, Ohio. . . . **Bill Mayhew** is still in Europe, the last we heard. . . . And I still have my Army desk job in Washington.

Matt Baczewski sent a card from Japan, where he spent a three week vacation in August. He is now back at work at Aerojet General in California. . . . **J. Edward Sunderland** is a professor in the Technological Institute of Northwest-

ern University, Evanston, Ill. . . . **Ed Ofengand** acquired a Ph.D. in microbiology from Washington University, St. Louis, and headed immediately for the University of Cambridge, England. . . . **Phil Rane** received his M.D. from Tufts Medical School in June. . . . **Dominic Sama** and **Kenzi Etani** claim that they have solved the problem of the bulky slide rule. They have produced a device they call the Concise. It is a pocket-size, circular slide rule, four by two and three-quarters inches, constructed out of plastic. A retail model is available, although the rules are presently being sold in bulk to firms for use as advertising give-aways.

Two summer weddings have come to our attention. **Steve Poulos** married Theodora Stokes in Burlington, Vt., last July 3. Steve is studying for his doctorate in civil engineering at Harvard. **Allan Murphy** and **Rochelle Mokriski** were married in Hazardville, Conn., on August 20. Allan is currently doing weather research for the Travelers Insurance Company, Hartford, Conn.

We regret to have to announce the death of **Jorge Diena**, who lost his life in an airplane accident last January. Jorge's father, in his son's name, has sent a contribution to the Alumni Fund.—**Edwin G. Eigel, Jr.**, Secretary, 311 North Thomas St., Arlington 3, Va.

'55

Cambridge has taken on that college-town look once again. Beards with legs are thick in the square, and one's next door neighbor at Durgin Park is as likely as not to be mumbling something about the integral of $x dx$ as he chews through his roast beef. We hope that you have had a good summer and we are anxious to hear about your latest activities.

The fifth-year reunion was a smashing success in every way. The accommodations, the food, the facilities, and the class spirit were in rare combination. Even the weather man co-operated in giving us two warm sunny days in Rindge, N. H., though it was raining in Boston. Forty-five class members attended with 34 wives and girl friends. Organized activities included swimming, free beer, boating, water skiing, free beer, softball, tennis, croquet, shuffleboard, and free beer.

After the cocktail party on Saturday, **Chan Stevens**, our first class president, was master of ceremonies at the class banquet. New elections were held, and the choices of the nominating committee were unanimously approved. Your new officers are **Jim Eacker**, President; **Len Wharton**, Vice-President; **Dell Lanier** and **Dennis Shapiro**, Secretaries; **Dennis Shapiro**, Treasurer; **Glenn Jackson**, Class Agent. We know that all of you want to thank Chan for his guiding hand over the past five years, and wish the new officers congratulations, and best of luck.

A report was made on the results of the class questionnaire: 154 replies were received, which, we are told shows a remarkable degree of class interest and spirit. Of those replying, 46 lived in Massachusetts, 18 in New York, 12 in California, 11 in New Jersey and Con-

necticut, and 10 in Pennsylvania. Altogether 29 states and four foreign countries were represented; 93 out of the 164 were living in geographical locations different from before attending M.I.T. Included in the group were 45 M.S., 6 Engineering, 10 Ph.D., 3 M.A., 1 Cantab., 8 M.B.A., 3 LL.B., and 2 M.D. degrees; 125 held jobs connected with their M.I.T. courses.

The median salary was about \$8,000, with ten people reporting \$12,000 or above; 116 were married, and 141 tax deductions were reported—70 boys and 71 girls (pretty good statistics). Eleven of us are fairly prolific with three offsprings. These families of five held the record until we recently heard from Marie and **Jack Sullivan** who report four children. Can you top this?

Ninety-seven of those reporting served Uncle Sam in uniform; 47 belonged to Alumni associations, and 155 would send a son to M.I.T. if the child so desired. The statistics proved to be most interesting to the group—in fact, when it was mentioned that five classmates reported annual salaries of over \$20,000, you could have heard a pin drop. Everybody sobered up real quick like. Wonder how many of us hit the boss for a raise the next week?

Sunday morning allowed time for a visit to the beautiful Cathedral of the Pines a few miles away. The climax of the weekend was the scrumptious steak broil in the afternoon. It seems that everyone left Woodbound Inn with a contented smile and a feeling of a weekend well spent.

The credit for this success goes to the reunion committee, and especially to Chairmen **Jim Eacker** and **Len Wharton**. Their job of planning, coordination, re-planning when Toy Town Tavern became unavailable, and re-coordinating, was magnificently done. They certainly deserve a vote of thanks. Assisting the operations were other committee members, **John Farmer**, **George Harper**, and **Dennis Shapiro**. Mrs. **Al Schell** deserves a special vote of thanks for her art work on the brochures, as do the committee-men's wives who actively participated in the organization. All in all, this was one of the most successful fifth year reunions we have heard of, and we can hardly wait for number 10.

We received a most interesting letter from **Demitrious Stephanou** in Athens, Greece. He regretted not being able to attend the reunion, but tells how comfortable life is over there. Demi is VP of a firm manufacturing building materials. Evidently, it doesn't take too much of his time since he recently collected two more trophies for car racing. Two passages from the letter seem particularly worthy of a direct quote: "Did you say anything about marriage? Oh no! . . . If anyone drops around here in Greece, give him my address. He will always remember the time he'll spend here. . . ." The address is 177 Peiraios, Athens—don't stampede, men.—Mrs. J. H. Venarde, 107 Mullin Drive, Wilmington 3, Del., and L. Dennis Shapiro, 15 Linnaean Street, Cambridge 38, Mass. (ELiot 4-4901), Secretaries.

'56

Starting off the fifth alumni year I am in mad preparation to return to Ivy Halls. The wife and I are settling ourselves in Newton after a summer of work in Michigan. There has also been a delay while I was at the Cape fighting Donna.

Beginning on a sad note, we have received word of the death of **Atsushi Matsuo** who drowned near New York on May 30th. . . . On the professional side, **Richard Bush** in a recent note says he received his Ph. D. from Illinois in February and is employed as a senior research chemist at the Washington Research Center of W. R. Grace & Co. . . . **Robert Clark** says that after working as a mining engineer for Anaconda, and as an industrial engineer for Kennecott, he is now president of Geo-Engineers, Inc. The Clarks also have five children. . . . Lt. **Angelo Perciballi** flew his C-124 in the airlift of supplies to Chile after the earthquakes. . . . **Stuart Uram** has joined the staff of Hitchiner Manufacturing Co., Inc. of Milford, N. H., and will work on casting development and alloys. . . . Dr. **Paul Walter** has joined the staff of the Central Research Department of duPont. Paul received his Ph. D. this year from Kansas.

From the Ivy Halls word has come that **Judith Gorenstein Ronat** received her M. D. from Tufts School of Medicine. . . . **Beldon Idelson** received the Maimonides Award of the Greater Boston Medical Society upon graduation cum laude from Boston U. . . . **Harris Weinstein** has been elected editor in chief of the Columbia Law Review for this year.

Now for those in the bell-ringing contest. **Lloyd Brace** married Marion Brooks Huggins of Concord in October. . . . **Michael Damone** wed Marie Claire LaPointe of Boston in June. . . . **Paul Manger** wed Nancy Elizabeth Scott of Woonsocket, R. I., in June. Paul is attending Yale Graduate School and works with his father in Manger Die Casting Co. . . . **Marilyn Schranze**, who went on for her M.S., now has her Mrs. She married **Douglas Finklestone** in July.

In a telephone conversation with **Bob Malster** I found that **Fred Culik** has accepted co-chairmanship of the Reunion Committee. Others who have signed up for the committee are **Ken Randolph** and **Dick Skavdahl**.—Bruce B. Bredehoft, Secretary, 1094 Center St., Newton Center 59, Mass.; M. Philip Bryden, Assistant Secretary, 3684 McTavish St., Montreal 2, PQ, Canada.

'57

Dave McGoff has received an AEC Special Fellowship in nuclear science and engineering. . . . **Tom Alden** has joined the GE Research Laboratory in Schenectady. . . . **Ken Peterson** married Donna Wheeler last May 21; **Gil Fryklund** was best man. Ken is doing R and D work in Needham. . . . **John**

Rinde is working on sonar systems for Sperry on Long Island, having completed three months with the Air Force. John and Toni have a six-month old daughter, Debbie Ann. . . . **Tom Burnett** is with DuPont's Photo Products Research Lab at Parlin, N.J. Tom, Elizabeth, and their two children live in Red Bank. . . . **Siegfried Breuning** has been appointed an Associate Professor of Civil Engineering at Michigan State, having held a similar position for the past two years at the University of Alberta. . . . **Dave Pearson** collaborated on a paper which appeared in the May issue of the Journal of The American Ceramic Society. . . . **Don Tufts** has joined Sanders Associates in Nashua, N.H. . . . **Nelson Hsu** received an MS from the University of Akron. . . . **Steve D'Urso** is one of seven scientists who formed High Temperature Materials, Inc. . . . **Brad Barnes** was wed to Louise Schwoer of Springfield, Ohio last May. . . . **Gerry Sapers** married Eleanor Clark of Brookline last June; **Dave Lovenvirth** was an usher. . . . Your class secretary was elected an assistant treasurer of the Bankers Trust Company of New York and is a loan officer in its Petroleum Department.—Alan M. May, Secretary, 525 East 81 St., New York 28, N.Y.; Martin R. Forsberg, Assistant Secretary, 11 Scottsfield Rd., Allston 34, Mass.

'59

Bob Muh's nice summer vacation mentioned in the July Class Notes was a trip to Europe. Bob deserves it for his fine work on this column during the last year. Yours truly is doing a stint with Uncle Sam at Aberdeen Proving Grounds, Md. Lieutenants **Jim Wishart**, **Barry Weinberg**, **Bob Dix**, **Ed Vrablick**, **John Curtis**, **Joe Lazar**, and **Dix Browder** have also been here during the last six months or so. . . . **Mike Nash** and his bride are stationed at Edgewood Chemical Center, Md. . . . Speaking of his Army, Lt. **Dave Packer** is just finishing his duty at Ft. Monmouth. Dave and his June bride, the former Susan Thompson, are heading back to Boston this fall. Dave said: the Army was "just like a continued honeymoon." Which Army?

Bill Bassichis sent me a fact-filled letter about the doings of many fifty-niners. Bill says: "I am working under Prof. Les Foldy here at Case, and though I miss M.I.T., I'm very happy here. On my vacation, I visited Boston for the wedding of **Dick Krock** and Barbara Goldstein (Randolph-Macon), and also visited New Jersey for the wedding of **Dave Garelich** and Judy Spritzer (Radcliffe). Old friends seen at the weddings included: **Sam Wilensky**, still at M.I.T.;

Howie Zabusky, finishing his M.S. at Princeton, and job hunting; **Mike Intrilligator**, heading back to M.I.T. after a visit to Yale; **Lee Cooper** (and Val), studying Philosophy at Columbia. On my return to Cleveland, I learned that **Arnie Olshaker**, who received his M.S. in Aero., was grounded by bad weather in Cleveland while flying his new plane to the West Coast. . . . I have since heard from him and he has arrived safely in L.A. He tells me that he runs into **Aaron Rosen**, every now and then, who is working for an aircraft firm out there. I also heard that **Mort Achter** has finally taken the oft-repeated advice and is majoring in music at Michigan. . . . They also tell me that **Larry Brontman** will soon be getting married. . . . **Harvey Stearn** dropped in for a visit while attending a Chemical Engineering convention in Cleveland." Thanks for the letter, Bill.

The wedding bells were sounded on July 16, for Charlotte Tripp and **Ed Cheatham**. Best wishes to you all. . . . **Charlie Cushing**, on a G.E. training program, is now at Binghamton, N.Y.

Please write, so we can keep these notes going strong. We *must* have some Professors, Presidents, General Managers, or new sons or daughters in our midst by now!—John J. McElroy, Associate Secretary, 15 Crocker Street, Rockville Centre, N.Y.; Robert Muh, Secretary, 8 Merviale Road, Great Neck, N.Y.

'64



The freshmen looked each other over on registration day.



1961 Alumni Register

The First Book Since 1955 Listing

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(Published by the Alumni Association)

IN MID-MAY, 50,026 announcements of the forthcoming publication of the 11th edition of the M.I.T. ALUMNI REGISTER went in the mails addressed to the membership of the Alumni Association . . . each addressee being asked to verify the data for his listing in the new book as tentatively set forth from our records on an enclosed IBM card.

The unprecedented response far exceeded the hopes of the undersigned editors of the 1961 REGISTER. Within the first 45 days *one-half* the 50,026 data cards had been checked and received back; during the summer further cards came back at an average per week of 1,416 during July, 843 during August, and 246 during September. Such widespread interest in the 11th edition clearly signifies that in *completeness and accuracy* the editorial standard of the 1961 REGISTER will surpass those of its predecessors.

FIFTY-ONE YEARS ago last March, the 1st edition of the REGISTER, dated 1909, made its bow and blush, listing 9,978 alumni from "Abbott, Bessie Owen, '99" to "Zuëst, Adolph, Jr., '07." At intervals of approximately five years, subsequent editions have appeared, the most recent being the 10th, dated 1955.

Besides alumni, members of the then student body who would become alumni during the "life" of the 1955 REGISTER were included in its *Alphabetical-Living* section which ran

from "Aall, Jacob, '50" through "Zych, Edward A., '45."

Including present alumni and the 1959-1960 student body, the *Alphabetical-Living* section of the 1960 REGISTER will contain an estimated 56,000 names — each with Class numerals, Course, all M.I.T. degrees received . . . and with address, position held, and firm name *wherever it is possible to obtain such verified information*.

EDITORIAL work on the *Alphabetical-Living* section has extended over the summer and will be completed by November 1st. Since this section will extend over 360 pages of text, it has been agreed that no further changes are to be made once a listing has been set in type. To do otherwise would disrupt press-room and bindery timings and seriously delay the appearance of finished clothbound books.

Meanwhile, compositors are now busily setting type for other sections of the book as follows:

(1) *Members of the Corporation since 1862*, over 430 names with dates of service.

(2) *Members of the Institute Faculty and Staff since 1865*, over 12,000 names with the Institute Departments in which they served or are serving, and their dates of service.

(3) *Officers of the Alumni Association since 1876*, with positions held, and their dates of service.

(4) *Deceased alumni*, now totalling more than 14,105, whose names will be listed alphabetically with numerals in a complete roster.

When type-setting on the *Alphabetical-Living* section is finished, the IBM data cards will be re-sorted mechanically to obtain 'copy' for the remaining section, in which the names will be cross-referenced *Geographically*.

PRESS-WORK on the final portions of the book is scheduled to commence in February, five weeks being allotted to the printer before finished copies are to start emerging from the bindery. Thus, we expect to fulfill all *advance orders* by April 10, the Institute's centennial anniversary date.

PRODUCTION of a 650-page reference work such as the forthcoming 11th edition of the REGISTER is an expensive undertaking. Nevertheless, in order to secure a wider distribution of the 1961 REGISTER — which will list 14 per cent more alumni than the book of 1955 — the Executive Committee of the Alumni Association established a cash discount for advance orders accompanied by payment at \$7.50 per copy post paid. The post-publication price will be \$9.00 per copy.

H. E. LOBDELL '17 }
D. P. SEVERANCE '38 } *Editors*
F. G. LEHMANN '51 }

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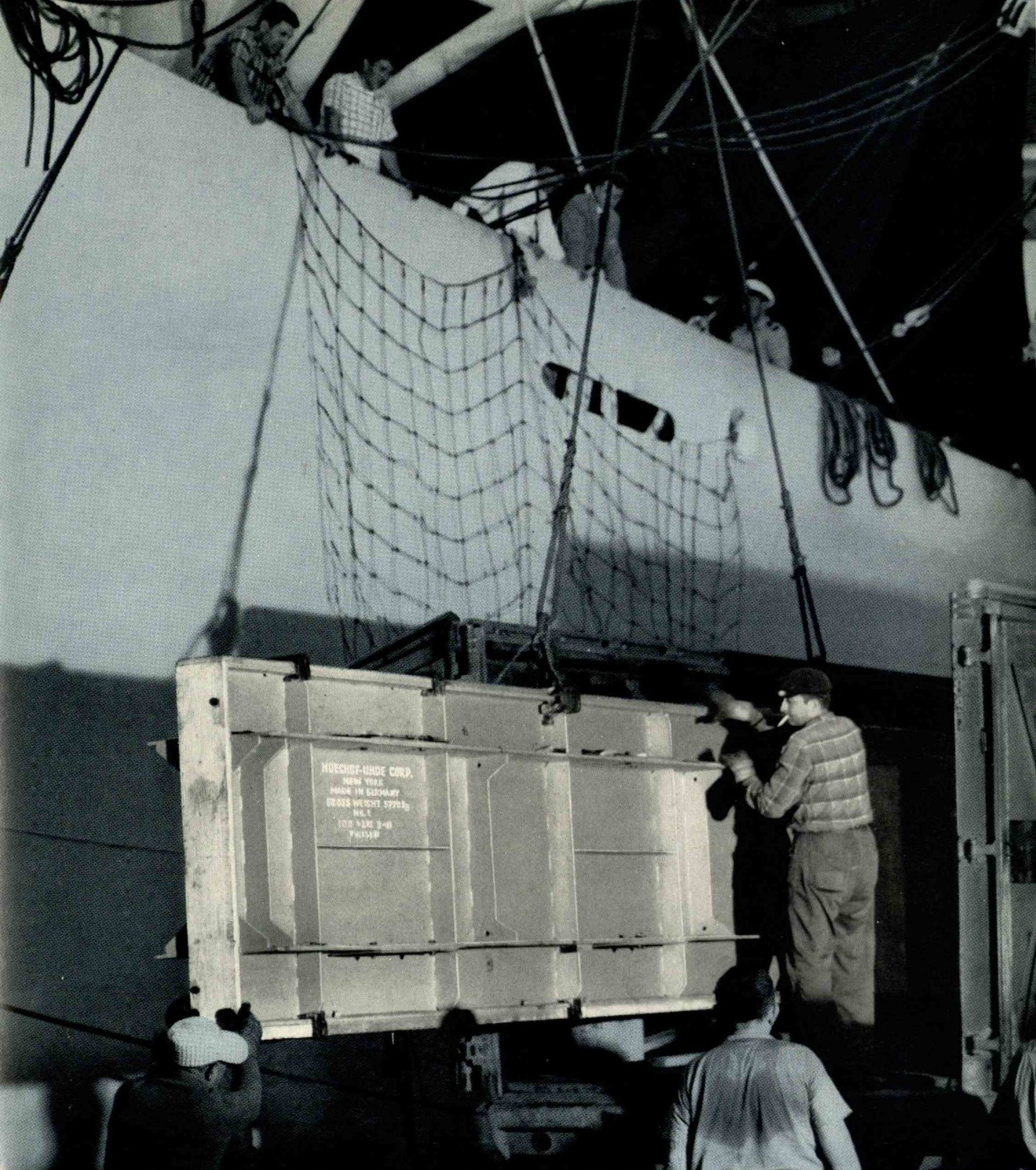
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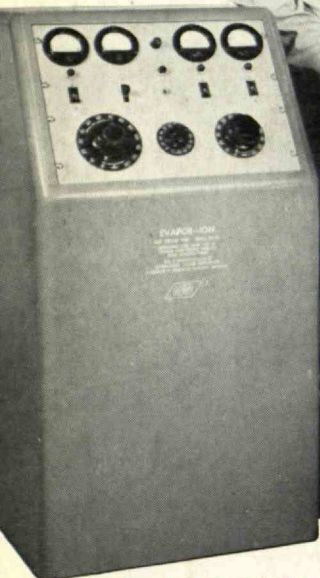


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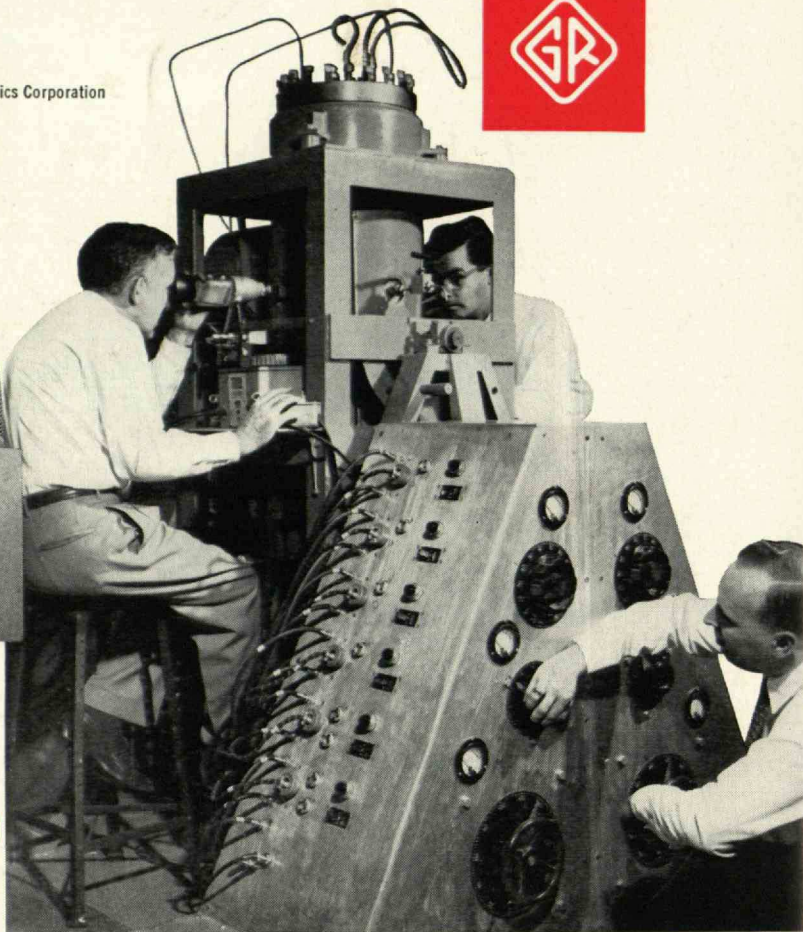


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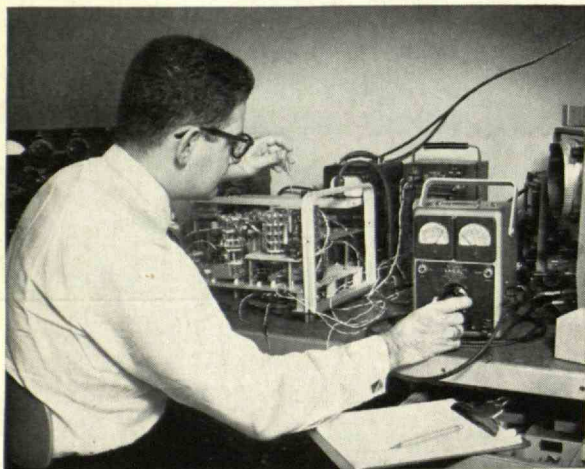
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